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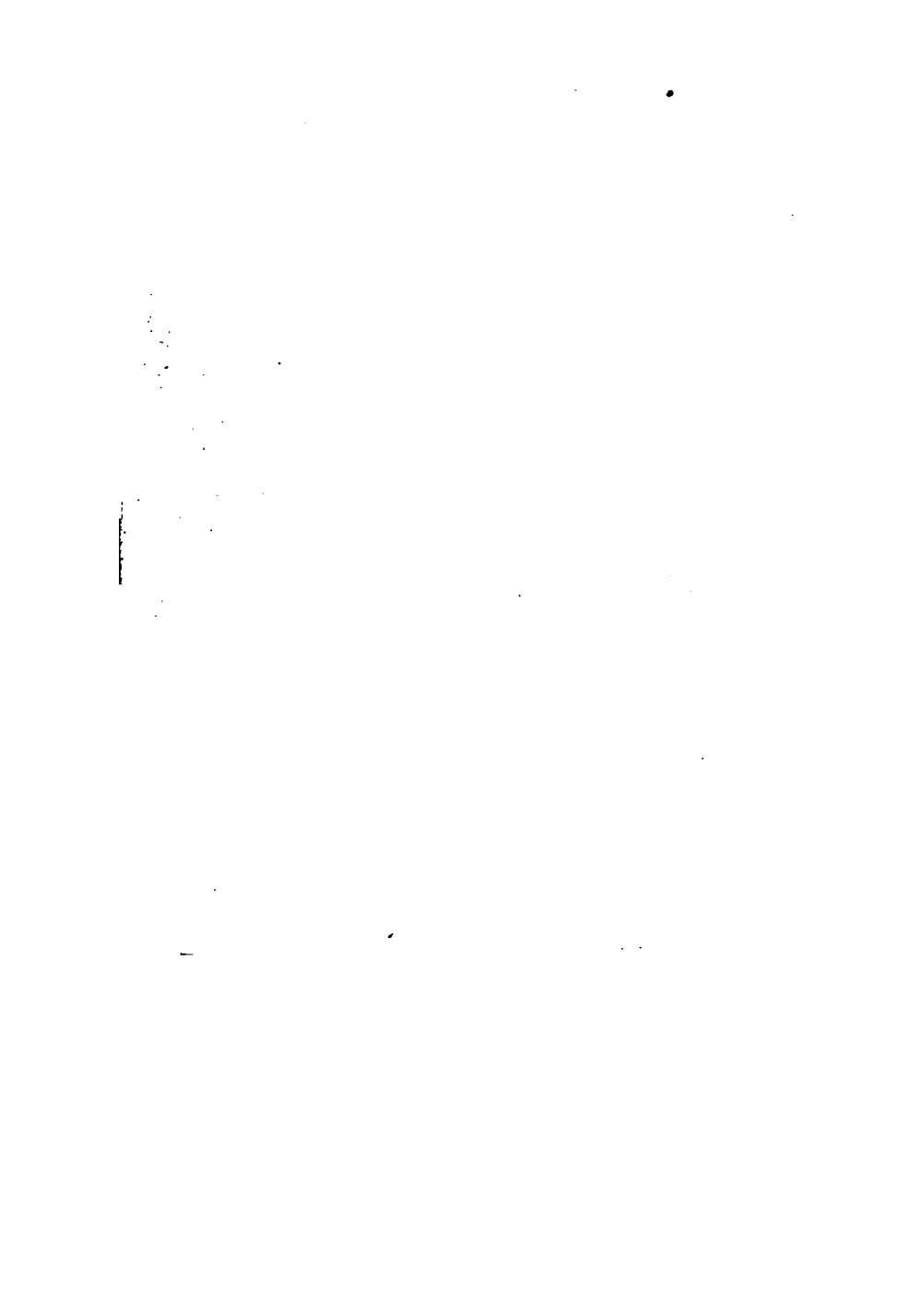
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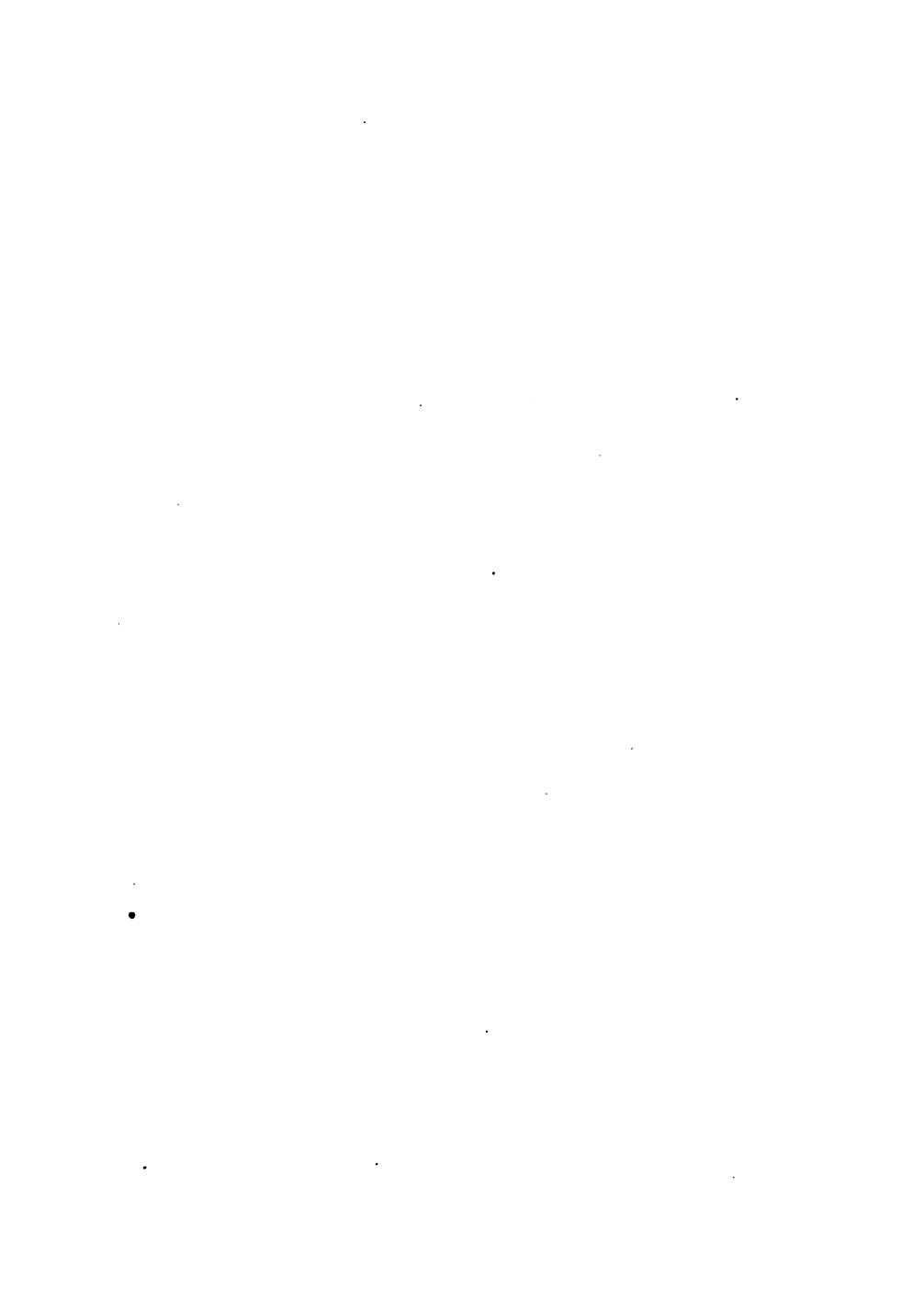
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PRACTICE OF MEDICINE.



A MANUAL
OF THE
PRACTICE OF MEDICINE.

BY
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FIRST AMERICAN, FROM THE THIRD REVISED AND
IMPROVED LONDON EDITION.



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1858.

MP

A MANUAL

OF

PRACTICE OF MEDICINE

BY

J. C. TAYLOR, M.D.

OF THE UNIVERSITY OF PENNSYLVANIA, AND OF THE
HOSPITALS OF THAT CITY.

PHILADELPHIA:
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TO
JAMES DUNCAN, ESQ., M.B., LOND.,
FORMERLY HOUSE SURGEON TO KING'S COLLEGE HOSPITAL,
&c. &c. &c.,

This Manual

IS DEDICATED BY HIS SINCERE FRIEND,

THE AUTHOR.

57285

PREFACE.

A THIRD edition of this Manual having been demanded, I have endeavored to render it more worthy of the great encouragement hitherto bestowed upon it. In doing this, the original plan has been adhered to, of making its pages the medium of as much practical information as the limited space at my disposal would allow: my aim having been to obtain brevity, not so much by omission as by a strict avoidance of all reiteration; by on all occasions saying what I mean in the fewest number of words possible; as well as by a careful selection of those points, only, which can aid the practitioner in the discharge of his responsible duties at the bedside. In short, I have endeavored to paint the features of disease not imperfectly, but—as it were—in miniature.

Without attempting in any degree to deprecate criticism, it is still due to my readers to say—how sincerely I trust it may not be thought that too dogmatic a tone has been adopted in the remarks upon the treatment of disease. My excuse, however—if one be necessary—is,

that I feel great confidence in the strength of the general principles which I have tried to inculcate; and being thus zealously impressed, it is difficult to do otherwise than speak positively.

In conclusion, I cannot help expressing a hope that, with all its faults and imperfections, this little work may still prove useful to many practitioners and students; and especially to those whose occupations prevent them from studying larger and more valuable treatises.

CHARLOTTE STREET, BEDFORD SQUARE,

September, 1857.

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A MANUAL OF THE PRACTICE OF MEDICINE.

SECTION I. GENERAL DISEASES.

1. INFLAMMATION.

EVERY part of the body is liable to inflammation (*in-flammo*, to burn), and much of the premature extinction of human life is due to it. Its distinctive external marks are the combination of pain, swelling, heat, and redness; "*notæ inflammationis*"—says Celsus—"sunt quatuor, rubor et tumor, cum calore, et dolore." The constitutional symptoms are fever and buffiness of the blood. Thus, if blood be drawn from a vein, it will exhibit, after standing and coagulating, the *buffy coat*; *i. e.*, the upper part of the clot will consist of fibrin unmixed with red corpuscles. It must be remembered, however, that this appearance is not characteristic of inflammation; it will generally arise, when—from any circumstance—the fibrin coagulates more slowly, or the corpuscles subside more rapidly, than in healthy blood. It is also frequently found in the blood of plethoric persons, and in that of pregnant women. Sometimes the surface of the buffy coat is contracted and concave; the blood is then said to be buffed and cupped.

Inflammation occasionally arises unexpectedly and from causes unknown. In other instances it will be found to have been produced by some mechanical or chemical irritant, or by cold, or some morbid poison in the system, or

contagion, or metastasis. It is said to be *acute* when it runs its course rapidly, and is attended with severe constitutional and local disturbance; *chronic*, when its phenomena are less strongly marked. By some authors the term *latent* has been applied to those cases in which internal inflammation proceeds silently and treacherously, and without manifesting signs by which its existence might be suspected.

The conditions of the healthy maintenance of any part by nutrition, are—observes Mr. Paget*—1st, a regular and not far distant supply of blood; 2d, a right state and composition of that blood; 3d, in most cases at least, a certain influence of the nervous force; and 4th, a natural state of the part in which nutrition is to be effected. In inflammation these are altered. The supply of blood is increased; the vessels are dilated and elongated, so that such as were previously invisible come into view, owing to their distension with red corpuscles; there is a tendency to stagnation—not coagulation—of the blood in many of the turgid vessels; and when lymph is effused, and begins to be organized, new vessels are formed in it. The purity of the blood is more or less disturbed; the fibrin is probably increased, so is the water, so—sometimes—are the white corpuscles; while the red corpuscles are diminished, and when drawn from the vessels have a tendency to cluster into masses very rapidly. The nervous force is not normal, but how it is changed we no more know than we can explain how it operates in ordinary nutrition. And, lastly, the healthy condition of the part itself is changed in inflammatory state; such change being due to more or less degeneration from hindered nutrition, as well as to the penetration of the inflammatory product into the elemental structures and the interstices between them.

The *terminations* or *events* of inflammatory action are resolution or cure; metastasis, or change of seat from one part to another; the effusion of serum; the effusion of coagulable lymph; the formation of pus, or suppuration; ulceration and gangrene; sphacelus, or mortification.

* Lectures on Surgical Pathology, vol. i. p. 294. London, 1853.

When inflammation attacks the areolar tissue, all the results of inflammatory action may occur. So also when the larger glands and the solid viscera of the body suffer. In inflammation of the serous membranes we expect there will be effusion of serous fluid and coagulable lymph—that it will prove adhesive inflammation. The synovial membranes are less liable to this disease than the serous, and coagulable lymph is seldom poured out. The mucous membranes are rarely affected by the adhesive form of inflammation, but the inflamed membrane pours out serous fluid, or viscid mucus, or pus, or blood, as is well seen in pneumonia, when the extravasated red corpuscles give a rusty tinge to the sputa; while the membranous exudation in croup is said to differ from coagulable lymph in being softer, in not contracting permanent adhesions to the subjacent tissue, and in never becoming organized.

When inflammation of any organ has terminated in suppuration, and the suppuration continues, its persistence is marked by *hectic fever*; the leading symptoms of which are frequency of pulse, alternations of chilliness with heat and flushing followed by sweating, a gradual wasting of the body, and daily increasing debility.

The general principles of *treatment* only admit of being laid down. In the commencement, the cause of the inflammation should, if possible, be removed. Attempts must then be made to obtain resolution; or, if this seems impossible, the next best termination, which, in cases of external inflammation, will generally be suppuration; in internal, sometimes suppuration, sometimes adhesion. The important point, then, for consideration is this: How are these desired results to be best attained? For very many years but one answer has been given to this question, viz: by the adoption of the *antiphlogistic regimen*; which consists essentially in the use of low diet, bloodletting, active purging, counter-irritation, mercury, and antimony. It is to be feared that these remedies still find favor with some practitioners; but I cannot help thinking that the more closely disease is studied, the smaller will become the number of the upholders of these antiphlogistic agents. My reasons for this opinion are: that when an inflamma-

tion is established it is not possible to cut it short; that bleeding, unless carried to a very dangerous extent, will not diminish the amount of blood in an inflamed part; that bleeding will not render an impure blood pure; that depressing agents favor the extension of the morbid action, and deprive the system of the power of rallying from the effects of the disease; that in many instances of inflammation there is depressed nervous power, and impaired action of the heart; and that in all cases a lowering plan of treatment is very badly borne in the present day, whatever may have been the case in former times.

It is a favorite theory with some pathologists that inflammation, as we now see it, is of a different type to that which formerly existed; perhaps being more readily excited by mal-nutrition, being more prostrating, and possibly being more dangerous to life, by incapacitating the system for the same degree of reaction as that which formerly followed an attack. In other words, the febrile symptoms accompanying inflammation are said to have altered from an inflammatory to a typhoid character. This view has been ably suggested by Dr. Alison;* though it is well disputed by Professor Bennett,† who believes that inflammation is the same now as it has ever been, that the analogy sought to be established between it and the varying types of fever is fallacious, and that bloodletting and antiphlogistic remedies have been all along opposed to a sound pathology. As these opinions cannot be discussed sufficiently fully in these pages, I would especially recommend the perusal of Dr. Alison's and Professor Bennett's very admirable essays to my readers; though, at the same time, I must say that I agree with Dr. Bennett. For if Dr. Alison be correct in all his assumptions, we must grant that not only the type but the cause of disease has changed; since, if we are to place implicit reliance upon the experience of Cullen, Gregory, Mason Good, and others, on some points on which they are likely to have erred from the imperfection of the means of diagnosis, we

* *Edinburgh Medical Journal*, May, 1857.

† *Idem*, March, 1857.

surely must credit their statements where simple observation alone was necessary. Yet, only fifty years ago—to take one example from many—inflammation of the brain was supposed to be the constant cause of insanity; and at Bethlem Hospital the system of treatment consisted of bleeding, purging, and vomiting in the spring months. “A certain day was appointed in which the patients were bled, another in which they were purged, another in which they were vomited. They were bled again in May and June, *the precise time depending on the weather*. All this had been the practice for many years, and no better practice, it was stated, was then known.*

But something more may be said upon the practical bearings of the question; *i. e.*, upon the treatment of inflammation. On this point I think it may be said that those practitioners who have the greatest amount of practical experience, combined with an extensive knowledge of physiology, pathology, and therapeutics, are now mostly agreed that our study should be confined to simply attempting to guide the morbid process to a favorable termination; just in the same way as we at present try to conduct cases of typhus, smallpox, scarlatina, &c., through their natural progress, without making heroic and injurious efforts to cut short the disease. This object is to be obtained by supporting the vital powers instead of lowering them, and by assisting the excretion of effete products. During the early stages of the attack, all sources of irritation should be removed, so that the patient may enjoy perfect quiet of body and mind; the sick room should be well ventilated, and kept at a temperature of about 60° Fahr.; the diet should be light, and cold water freely allowed; and if the febrile excitement be great, salines in small doses—Formulæ 312, 316, 318, 323, and 327—may be ordered. When the pulse becomes soft, good beef tea and nutrients are to be administered; and directly there are indications of weakness, we may be sure that wine is required, in quantity varying from four to twelve ounces in the twenty-four

* Statistics of Insanity; being a Decennial Report of Bethlem Hospital. By Dr. W. C. Hood. London, 1856.

hours. As the period of crisis approaches, Dr. Bennett's example may be followed of giving a diuretic—spirits of nitric ether \mathfrak{z} ss, with or without ten minims of colchicum wine—thrice daily, to favor the excretion of urates; whilst, when a crisis occurs by sweating or diarrhœa, care is to be taken not to check it in any way.

The success of this plan is apparent from the following: During the last eight years Dr. Bennett has thus treated all the cases of pneumonia which have been under his care in the clinical wards of the Royal Edinburgh Infirmary, amounting to sixty-five; of which number sixty-two were dismissed cured, and three died, that is, one in $21\frac{2}{3}$. Of the sixty-two cases cured, fifty-five were uncomplicated and seven complicated; of fifty-one of the uncomplicated, forty were single and eleven double pneumonias, the average duration of the former being $14\frac{1}{2}$ days, and of the latter twenty-one days; while of the seven complicated, one supervened on bronchitis and emphysema, two on typhus fever, one on bronchitis and pleurisy, one on pleurisy with effusion of eight weeks' standing, one on rheumatism with heart disease, and one on severe rheumatism with endocarditis and pericarditis; the average duration of the pneumonia in these seven being $21\frac{1}{3}$ days. The three fatal cases were all complicated; the first, with uncontrollable diarrhœa and follicular disease of the mucous membrane of the small intestines; the second, with persistent albuminuria and anasarca; and the third with delirium tremens, and universal cerebral meningitis.

When this result is contrasted with that obtained from an opposite course of treatment, it seems to me that all doubt on the subject must be removed. Thus, during ten years—from 1st July, 1839, to 1st July, 1849—648 cases of pneumonia were treated, by different physicians, according to the rules then enforced by all writers, in the Royal Infirmary of Edinburgh; of which number 388 were cured, 38 relieved, and 222 died. Of 107 cases, recorded by M. Louis in 1835, and treated by bleeding and tartar emetic, 32 died. So, of 648 cases treated by Rasori, in the hospital at Milan, by large doses of antimony, 143 died. Again, Laennec, who bled moderately at the commencement

of the disease, regarded the mortality as one in six or eight. And lastly, Dr. Dietl treated 380 cases of primary pneumonia, in the Charity Hospital of Vienna, thus : 85 by venesection, one death in five resulting ; 106 by large doses of tartar emetic, with one death in 5.22 ; and 189 by diet only, with one death in 13½, all the fatal cases moreover being complicated.

At the same time that bleeding as an antiphlogistic remedy should be rarely if ever practised, it may be remembered that a small loss of blood may often be beneficial, particularly in relieving excessive pain, and in moderating attacks of dyspnoea due to some obstruction to the circulation in the heart or lungs. As Dr. Bennett remarks : "I have often been struck, especially in cases where large thoracic aneurisms cause these symptoms, with the small loss of blood which will occasion marked relief. The same result may be hoped for in other cases where the congestion is passive, even when that is associated with active repletion of blood, followed by exudation. But I need scarcely remark that this mere palliative object of bloodletting is not the ground on which the practice has hitherto been based, and that in this point of view it requires to be very differently explained." The same remarks apply to the use of tartar emetic ; which is valuable in small doses, and combined with other neutral salts to favor excretion by the skin, kidneys, or intestines ; but most injurious when employed in the heroic way often recommended.

With regard to the use of mercury, there appears to be every reason to believe that its utility in controlling inflammation or in promoting absorption of the effused products has been very much overrated ; and indeed it seems highly probable that inflammatory diseases will progress more favorably without the use of this medicine than with it. Few practitioners even now would think of treating pericarditis or iritis without mercury ; yet more than ten years have elapsed since Dr. John Taylor's valuable contributions to clinical medicine were published,* in which it was clearly shown that the opinions then current on this subject re-

* *Lancet*, from 17th May, 1845, to 31st October, 1846.

quired revision. For example, of the cases on which this excellent physician founded his observations, four got well without any treatment; in twelve, ptyalism was not followed by any abatement of the pericarditis; in six, ptyalism was followed by pericarditis; in three, by endocarditis; in two, by extensive pleurisy; in four, by pneumonia; in one, by erysipelas and laryngitis; in one, the pericarditis and pneumonia both increased in extent after ptyalism; while in only one instance was salivation followed speedily by relief, and in two or three by a gradual diminution. More recently, Dr. Henry W. Williams* has cured sixty-four cases of iritis, of every degree of severity, including its idiopathic, traumatic, rheumatic, and syphilitic varieties, without a dose of mercury; the treatment having chiefly consisted in sustaining the general system, in relieving pain by narcotics, and in keeping the pupil dilated by belladonna.

From all this it follows that, in the treatment of acute inflammatory diseases, practitioners must be content to trust more to nature and less to heroic remedies than they have been in the habit of doing; for it is highly probable that though we may be able to guide inflammations to a successful termination, yet we cannot cut them short, and any attempts to do so will merely increase the patient's danger.

2. DROPSY.

Dropsy may be defined as an accumulation of watery or serous liquid in some one or more of the natural serous cavities of the body, or in the interstices of the areolar tissue, or in both, independent of inflammation.

When the cerebral ventricles are distended with water, we say the patient has *hydrocephalus*. When serous fluid occupies the pleura or the pericardium, we express the diseased conditions by the terms *hydrothorax* and *hydro-pericardium*. If the cavity of the peritoneum be the seat

* The Boston Medical and Surgical Journal, vol. lv. pp. 49, 69, 92. 1856.

of the collected water, the complaint is called *ascites*. Dropsy of the tunica vaginalis testis is termed *hydrocele*. Should the areolar tissue of a region become infiltrated with serous liquid, the part is said to be *oedematous*; while *anasarca* is the term applied to the more or less general accumulation of serum in the areolar tissue throughout the body. Lastly, the combination of *anasarca* with dropsy of one or more of the large serous cavities is known as *general dropsy*.

Now, to explain the mode in which dropsy may originate, it must be remembered that from all the surfaces of the healthy body a kind of excretion or oozing forth of fluid is constantly taking place, accompanied at the same time by absorption; so that when the two processes of exhalation and absorption are properly balanced, the surfaces will merely be kept moist. But suppose that the balance from some cause is disturbed; imagine exhalation to take place more rapidly from the surfaces of one of the shut sacs, or absorption more slowly than in health; under such circumstances it is clear that dropsy must result. It is probable that absorption takes place by the lymphatics, by the lacteals, and by the veins; the first removing the worn-out particles of the body, the second taking up the chyle from the alimentary canal, while the third imbibes the fluid exhaled from serous membranes. In dropsies, the veins are generally in fault, and it often happens that from congestion these vessels are unable to take up more fluid. Hence, if the process of exhalation remains even as in health, an accumulation of fluid must take place.

When dropsies arise from defective absorption, they are called *chronic* or *passive* dropsies; when from excessive exhalation of serous fluid, *active* or *acute*. Those due to cardiac or renal disease are usually of the first kind; those caused by cold, by sudden checking of the perspiration, by the poison of scarlatina, &c., of the second. The *treatment* of dropsy will be discussed in speaking of the different varieties; but it may be here remarked that in all cases two indications require to be followed, viz., the cure of the dropsy which is only the symptom of other disease, and the relief of the disease itself.

3. CARCINOMA, OR CANCER.

1. GENERAL OBSERVATIONS.—There is scarcely an organ or tissue in the body which may not be attacked by this malignant and terrible disease. It occurs most frequently in women, on account of the liability of the breast and uterus to be affected by it; otherwise it would seem to be more common in men, since the skin, bones, and digestive organs are more prone to it in the male than in the female sex. It is very uncommon in children; when it occurs in them it is generally located in the bones, or in the eye, or—very rarely—in the testicle.

A cancer may be described as a local manifestation of a specific disease of the blood, having incorporated in it peculiar morbid materials which accumulate in the blood, and which its growth may tend to increase.* As it is of constitutional origin, so the removal of the local manifestation does not effect a cure; but the cancer returns either in the seat of the original disease, or in some other parts. Moreover, when the primary affection has existed for a variable period, secondary deposits are very apt to be formed in the lymphatic glands, lungs, liver, spleen, &c. Although the tendency of cancer is to increase constantly and rapidly until life is destroyed, yet in a very few instances it becomes latent; that is to say, after it has reached a certain line of development it remains in a state of quiescence, neither advancing nor receding. Sir B. Brodie refers to a case where the cancer was quiescent for twenty-five years: Dr. Babington knew an instance in which scirrhus of the mamma was stationary for twenty-four years; and Sir Astley Cooper attended two women in whom the period of latency was, respectively, seventeen and twenty-two years. Equally rare is the spontaneous cure of cancer, by inflammation, ulceration, and sloughing, or by fatty or calcareous degeneration; yet it is certain that nature has by these means effected at least temporary, if not permanent cures.

* Mr. Paget. *Opus jam cit.* Vol. ii. p. 287.

If any cancerous growth be minutely examined, it will be found to consist of peculiar nucleated cells, called "cancer-cells," and of their free nuclei; and a milky fluid or semi-fluid mixture, termed "cancer-juice." The cancer-cells and juice are either infiltrated into previously healthy tissues, or they are contained in a stroma or bed of new fibrous tissue. The cancer-cells are of various shapes, being round, oval, fusiform, triangular, or elongated into one or more sharp processes; they vary in size from the $\frac{1}{100}$ to the $\frac{3}{100}$ of an inch, the medium being $\frac{1}{100}$; and they chiefly resemble, in structure and aspect, the secreting gland-cells. On magnifying a specimen of scirrhus about two hundred diameters, the cells will be seen containing a comparatively large, regular, oval or round, and well-defined nucleus; sometimes two nuclei exist in the same cell; and each nucleus has one or two nucleoli. Moreover, mingled with these cells, we find free nuclei, and numerous degenerated cancer-cells; some of these cells appearing withered and full of oil-globules, others being transformed into granular matter in the *débris* of which the nuclei lie loose.*

2. VARIETIES OF CANCER.—There are three principal varieties, and five sub-varieties of malignant disease;† the latter being probably mere modifications of the former. They consist of:—

Scirrhus, or Hard Cancer.

Medullary, or Soft Cancer.

* Lebert thinks that the cancer-cell is pathognomonic, that it may be distinguished from every other kind of cell growth, and that it positively indicates the nature of the formation. Dr. Hughes Bennett and Müller consider, on the other hand, that no single element is diagnostic. Hence, their opinion seems to confirm that generally entertained, viz., that the microscope is merely an aid to diagnosis; and that, conjoined with a consideration of the symptoms, progress, form, and general appearance of the morbid growth, it may generally enable us to arrive at a correct conclusion as to the nature of any particular case.

† To avoid any error, it should be mentioned that the terms "cancer" and "malignant," employed in the text, are regarded as synonymous. The expression "malignant" is so generally used, that—provided a definite meaning is attached to the word—I cannot see how any good would arise from abandoning it.

Epithelial Cancer.

Colloid—Gelatiniform, Alveolar, Cystic, or Gum Cancer.

Melanoid, or Black Cancer.

Osteoid Cancer.

Hæmatoid Cancer, or Fungus Hæmatodes.

Villous Cancer.

A scirrhus cancer never becomes medullary or epithelial, nor does the converse happen. But a medullary or an epithelial cancer may become melanoid or hæmatoid; a scirrhus or a firm medullary may become osteoid; or either of the three chief forms may assume the colloid character.

a. *Scirrhus, or Hard Cancer.*—This is the most frequent form of cancer. It is seen occasionally in the stomach, in the upper part of the rectum, and elsewhere; but most frequently, by far, in the female breast.

In the breast it is found as an infiltration, affecting part or the whole of the mammary gland. The diseased mass is extremely hard, correspondingly heavy, and inelastic; the increase in size is not great, for the part of the gland affected is not much larger than it was in health. After a variable period, the tumor, with the proper tissues of the breast in contact with its surface, and the skin, which is often adherent to it, ulcerates; a foul, excavated, spreading ulcer, with everted edges, being formed; from which there is a constant sanious discharge, and very often attacks of hemorrhage. The ulceration sometimes extends from the skin inwards; sometimes from the substance of the cancer outwards. The amount of suffering varies; occasionally the pain is very slight; but generally it is severe, lancinating, and most exhausting.

As the local disease advances, the health fails, and the cancerous cachexia becomes fully established. This condition has been well described by Sir Charles Bell: "The general condition of the patient is pitiable. Suffering much bodily, and everything most frightful present to the imagination, a continual hectic preys upon her, which is shown in increasing emaciation. The countenance is pale and anxious, with a slight leaden hue; the features have become pinched, the lips and nostrils slightly livid; the

pulse is frequent; the pains are severe. In the hard tumors the pain is stinging or sharp; in the exposed surface it is burning and sore. Pains, like those of rheumatism, extend over the body, especially to the back and lower part of the spine; the hips and shoulders are subject to those pains. Successively the glands of the axilla, and those above the clavicle, become diseased. Severe pains shoot down the arm of the affected side. It swells to an alarming degree, and lies immovable. At length there is nausea and weakness of digestion. A tickling cough distresses her. Severe stitches strike through the side; the pulse becomes rapid and faltering; the surface cadaverous; the breathing anxious; and so she sinks."*

Scirrhus of the breast is very rare in men; it occurs in women most frequently between the ages of forty-five and fifty.

Records, made by M. Paget,† of 139 cases of scirrhus of the breast, watched to their conclusions, or to their survivals beyond the average duration, give the following results: In 75 not submitted to operation, the average duration of life, after the patient's first observation of the disease, has been 48 months. In 64 submitted to operation, and surviving its immediate consequences, the corresponding average has been a little more than 52 months. The longest duration of life, in the former class, has been 216 months; in the latter class, 146; the shortest in the former was 7 months; in the latter, 7½.

β. *Medullary or Soft Cancer*.—Medullary, or encephaloid, or cerebriform cancers are of two kinds—soft and firm—the former being the most frequent. In either condition, they are found in about equal proportion as separable tumors, or as infiltrations. As *separable* tumors, when occurring in the testicle, the breast, the eye, the intermuscular and other spaces in the limbs; as *infiltrations*, when occupying the substance of the uterus, the alimentary canal, the serous membranes, and the bones. In either form

* Medico-Chirurgical Transactions, vol. xii. p. 223. London, 1822.

† Lancet, 19th January, 1856.

their course towards a fatal career is rapid, the average duration of life, from the patient's first observation of the disease, being little more than two years; moreover, they occur at an earlier age than other kinds of cancer, being sometimes met with before puberty. The *soft medullary tumors* are commonly round or oval, and present to the touch a sense as of the fluctuation of some thick fluid, so that the most experienced are often deceived. They are very vascular; the material composing them resembles brain substance, partially decomposed and broken up; they yield abundance of cancer-juice on being pressed or scraped; and they frequently contain extravasated blood. The *firm medullary cancers* are elastic and tense, but not hard, like scirrhus; in their shape and size they resemble the soft; they may possess distinct investing capsules, or they may extend into the substance of organs.

Medullary cancer of the breast is so rare in this country that, even in our museums, specimens are but seldom seen; on the Continent, however, this form is more common. The lymphatic glands are much more frequently primarily affected with medullary cancer than with scirrhus.

γ. *Epithelial Cancer*.—Some difference of opinion exists as to whether this disease is really a form of cancer, or whether it is not an affection *sui generis*, consisting of an infiltration of cells of scaly epithelium, with a serous liquid different from cancer-juice. Hence some authors speak of it as "epithelioma," or as "cancroid" affection. In its clinical history, however, it resembles cancer; inasmuch as it returns after being removed by operation, it is prone to incurable ulceration, it affects the lymphatics seated near it, and it destroys the patient; but it is peculiar in two respects—it is very little liable to multiplication in internal organs, and it appears often to be produced by local causes only. As pathologists seem divided upon this question, it will be better to treat of it in this place, as if it were undoubtedly a true form of cancer; a plan which has at least this recommendation, that it is adopted by Mr. Paget.

This disease is generally located in or beneath some portion of skin or mucous membrane; its most common

seats being the lower lip, the scrotum—in chimney-sweeps, the tongue, the larynx, the nymphæ, the labia majora, and the cervix and lips of the uterus. True “cauliflower excrescence of the uterus” is in all probability always a variety of epithelial cancer; commencing on the surface of the os uteri in the form of small papillary or villous eminences, which, by their growth, expansion, and branching, take on the peculiar cauliflower appearance. It is a rare disease; so much so, that during the six years I was physician to the Hospital for Women, there came under my care—according to the notes which I have recorded—59 cases of carcinoma of the uterus amongst the out-patients, only one of which was an example of cauliflower excrescence; the remaining 58 being instances of scirrhus, or of medullary cancer, or more frequently of epithelial cancer not assuming the appearance of an excrescence.

Epithelial cancer is generally thought to occur oftener in the male than in the female sex. It is most common after the age of 50. When once established, it gradually progresses to destroy life, but more slowly than medullary cancer; rather less than four years being the average duration of life from the commencement. Its malignancy seems greater when it is seated on the tongue or on the penis, than when on the scrotum or the lower extremities; and the removal of the disease by operation probably gives a better chance of recovery than the excision of any other variety of carcinoma. The essential character of this disease is, that it is composed for the most part of cells resembling—according to some authors, identical with—the tessellated or scaly epithelium lining the inside of the mouth; these cells being infiltrated, together with a juice or serous fluid, into the interstices of the affected tissues.

8. *Colloid Cancer*.—This variety of cancer—to which the names of Alveolar, Cystic, Gelatiniform, and Gum Cancer have been applied—consists of a clear viscid substance somewhat resembling soft gelatine or gum. Its most frequent primary seat is the stomach, intestinal canal, omentum, ovary, breast, and peritoneum; secondarily, it affects the lymphatic glands, lungs, &c. A section of a *colloid cancer* presents to the naked eye a clear, soft, gela-

tinous mass, intersected and surrounded by tough fibrous-looking tissue; the intersections, when numerous, forming small cysts or cavities filled with colloid matter. Such a cancer often attains considerable size; in the Museum of King's College is a preparation showing a tumor of this nature, connected with the omentum, as large as a coconut. It probably always occurs as an infiltration, superseding the natural tissues of the affected part as it grows. It occurs equally in both sexes; it is very rare in children; and in its progress and symptoms it corresponds with other cancers.

4. *Melanoid Cancer*.—These cancers are said, generally, to be medullary cancers, modified by the presence of a dark pigment formation in their elemental structures; this pigment varying in degree from a light brown to a deep black. The pathological history of these cancers corresponds in its main features with that of the medullary tumors; they often have their primary seat in or beneath cutaneous moles; they give rise to numerous secondary formations; and they usually occur as separable growths, not as infiltrations. Out of 365 cases of cancer, to which Mr. Paget refers in his lectures, twenty-five were instances of melanoid cancer; seventeen of these were in females, eight in males; in fourteen, the primary seat of the disease was in the skin or subcutaneous tissue; in nine, in the eye or orbit; in one, in the testicle; and in one, in the vagina.

5. *Osteoid Cancer*.—The nature of osteoid cancers may be best expressed, according to Mr. Paget, by calling them ossified fibrous or medullary cancers, and by regarding them as illustrating a calcareous or osseous degeneration. Their growth is usually from some bone, and especially from the lower part of the femur. Their general history corresponds to that of the scirrhus and medullary varieties; they are as malignant and as quickly fatal as the medullary; and they give rise to secondary deposits in the areolar tissue, lymphatics, lungs, &c.

6. *Hæmatoid Cancer*.—Hæmatoid cancer—fungus hæmatodes—is probably a soft medullary or other cancer, the substance of which is more or less infiltrated with blood.

When it protrudes through the skin, it forms a large vascular mass, somewhat resembling a clot of blood.

9. *Villous Cancer*.—These are varieties of medullary and perhaps of epithelial cancer, occurring most frequently on the mucous membrane of the urinary bladder. Their histories coincide with those of medullary cancers.

3. CAUSES OF CANCER.—With regard to the causes of this disease but little is known. All classes of society are equally subject to it; the rich and poor, the idle and industrious, the gay and the melancholy, all suffering from it in equal proportions. The only known predisposing causes are thus summed up by Dr. Druitt: "1. *Descent* from a cancerous parent, which seems to have some slight influence, and was found by Lebert to exist in about one-seventh of a certain number of cases. 2. *Sex*, for cancer is at least from one-third to one-half more prevalent in the female. 3. *Age*, because nearly half of the entire number of cases occur between forty and sixty. Lastly, Although cancer is not contagious in the ordinary sense of the term, there seems reason for believing that, if fresh cancer-cells are introduced into the blood, they may be deposited and propagate themselves. The experiment has been tried on dogs by Langenbeck and by Lebert, and cancerous tumors were found in various parts, when the animals were killed some time afterwards; yet it must be remembered that some of the tumors found in these cases may have existed before the inoculation."* From all this it is evident that our knowledge of the causes of this disease is very slender. In the great majority of cases the patient is unable in any way to account for its origin; very frequently—in scirrhus of the breast especially—the tumor is only discovered by accident; and it is almost certain that mental anxiety, peculiar temperaments, particular occupations, injuries, &c., have nothing to do with producing the cancerous diathesis. In listening to the histories of patients afflicted with cancer of the uterus, I have been struck with the frequency with which they have told me of the loss of one or more of their relatives from phthisis. The same circumstance has been

* *The Surgeon's Vade Mecum*, 7th ed., p. 112. London, 1856.

noticed by Mr. Zachariah Laurence, who seems rather inclined to entertain the opinion that there may be some connection between the two diseases.*

4. **TREATMENT OF CANCER.**—The treatment of cancer is at present—as far as I positively know—in just the same unsatisfactory condition as was that of phthisis only a few years ago. But inasmuch as we have every ground for believing that well marked cases of pulmonary consumption, which would have been regarded as utterly incurable ten years since, are now sometimes restored to health by the aid of medicine; so we have every reason to trust that at no distant day cancer may be made to yield to some remedy or combination of remedies, yet to be discovered. In the mean time much may be done to relieve the patient's sufferings, and to prolong life.

a. *Palliative Treatment.*—The great indication is to keep up the constitutional powers to as near the standard of health as the disease will allow, by tonics, nourishing food, pure air, warm clothing, great cleanliness, mental occupation, and by preventing or relieving pain. In carrying out this indication the physician will not only be earning the gratitude of his patient, but he may, by kindness and judicious advice, be preventing him from consulting those callous charlatans who will make the most solemn assertions of their ability to cure him, until he either sinks into the grave, or has expended every guinea that he possesses. Moreover it is the positive duty of the practitioner to make every effort to give even temporary relief; for, as Bacon has well said, "I esteem it the office of a physician not only to restore health, but to mitigate pain and dolors, and not only when such mitigation may conduce to recovery, but when it may serve to make a fair and easy passage."†

The best means to adopt in addition to all known hygienic measures for the maintenance of the general strength are, *first*, to do all that is possible to relieve pain; which may be done either by the administration of

* *Illustrations of the Pathology of Cancer.* London, 1856.

† *Advancement of Learning.*

opium, conium, or henbane, or by the application of intense cold. By this alone much good may be effected; but we must, *secondly*, try to improve the blood by ferruginous tonics, and by the use of the most nutritious kinds of food. Wine, beer, milk, and different varieties of animal food, must be freely given; bark and cod-liver oil will often be valuable; and the patient must breathe pure air. *Thirdly*, the growth of the cancer may perhaps be checked by the bromide of potassium, or by the iodide of iron, or by the iodide of arsenic. My experience has been greater with the bromide of potassium than with any other remedy, because I have found it give most relief; but the practitioner who expects it to effect a cure will be only disappointed. By these measures, perseveringly used, mental and bodily ease may be given and life prolonged even for a few years.*

β. Curative Treatment.—In attempts to effect a cure, one of three plans has usually been followed; viz., either excision; removal by caustics; or the promotion of absorption by methodical compression, sometimes combined with the application of intense cold.

First, as to Excision.—A general opinion can only be

* As illustrative of these observations, the following case may be related: Mary Stanning, thirty-two years of age, married but never pregnant, came under my care at the Farringdon Dispensary, on 20th March, 1851, suffering from scirrhus of the rectum. Finding that I could not cure her, she applied and was admitted into one of our metropolitan hospitals, which she left in an apparently dying state in April, 1852. On the 28th of the same month I was sent for; and found her very low, and as if she could not live many hours. The eminent surgeon under whose treatment she had been in the hospital wrote to say that he had heard M. S. was under my care, that she was dying, and that he would like to be present at the post-mortem examination. By attendance to the hygienic rules laid down in the text, by the occasional exhibition of steel and other tonics, by the employment of wine and nourishing food, and by the daily use of large quantities of opium, this patient slowly improved; she was able to get about, and to keep her rooms clean, &c.; and although her sufferings at times were acute, yet she generally was tolerably free from pain until the last few weeks of her life. She died on the 18th of June, 1856.

formed with great difficulty, since the views of surgeons are so divided. But I think no one will deny that extirpation by the knife is quite insufficient to effect a cure; it may relieve the local distress, it may prolong life for a few weeks, and, as chloroform renders the operation painless, it may be sometimes worth while resorting to it to gain these objects.* With regard to the time at which it is best to resort to the knife, Mr. Spencer Wells observes: "It is not to use it in the early stages of cancer, not to use it unless the cancer is actually ulcerated, or growing so fast that the skin is about to give way. In such cases, especially where an open cancer gives great pain, and is wearing away the patient by bleeding or profuse fetid discharge, the knife is used in the hope of relieving suffering, and prolonging, not saving life. In some other cases, where a cancer causes great mental anxiety to a patient, you may remove it at her earnest entreaty, after explaining fairly the danger of relapse."† While speaking of the knife, it may also be mentioned that attempts have been made to destroy malignant tumors by lowering their nutrition; with which object practitioners have tied the chief nutrient arteries of the affected part. No real success has attended these efforts.

Secondly, Removal by Caustics.—This method has found many advocates in the present day; and it possesses at least this advantage, that it may be useful in deeply ulcerated, and some other cancers, where the knife is objectionable. The chief agents which have been used are arsenical pastes, chloride of zinc, chloride of bromium, sulphate of zinc, manganese cum potassa, the strong

* Mr. Weedon Cooke states—*Lancet*, 11th April, 1857—that 128 persons have presented themselves at the Cancer Hospital who had been elsewhere operated upon, and the average duration of their freedom from any external sign of the disease was eighteen months. Mayo operated on 100 cases, and considered that five had been permanently benefited; Boyer enumerates four cures in the same number; while M'Farlane could not point to a single radical cure out of 118 operations.

† On Cancer Cures and Cancer Curers. *Medical Times and Gazette*, 11th June, 1857.

mineral acids, and the concentrated alkalis. The *arsenical pastes* cannot be employed without great caution, inasmuch as their action is not merely local but pervades the whole system. M. Manec, of the Salpêtrière Hospital, Paris, has largely used them; he believes that arsenic has a peculiar destructive affinity for cancerous growths, and that its action does not extend to healthy tissues. His formula—the only one which should be tried—is one part of arsenious acid to seven or eight of cinnabar, with four of burnt sponge, made into a paste with a few drops of water. He does not apply it to a surface of greater extent than the size of an English florin at each application; and he states that the quantity of arsenic absorbed from such a surface never produces unpleasant symptoms. Should severe pain arise, it may be mitigated by applying bladders containing ice and salt.

The *chloride of zinc* is a valuable agent, especially as there is little to fear from its absorption. The epidermis must first be destroyed by a blister or by strong nitric acid; and the caustic is then to be applied, mixed according to F. 191, in quantity varying with the amount of destruction required. Dr. Fell's plan of treatment consists in the use of the chloride of zinc combined with a perennial plant known among the North American Indians by the name of puccoon, but described by botanists—owing to the blood-like juice which exudes from it when cut—as the *Sanguinaria Canadensis* (F. 190). Together with this application, the general health is attended to; a nourishing and sustaining diet is allowed; and the puccoon is administered thrice daily in half-grain doses. Frequently also, Dr. Fell combines with this drug the sixteenth of a grain of the iodide of arsenic, and one grain of the extract of conium. The *chloride of bromium* has been highly praised by Landolfi, who uses it made into a paste with flour, or combined with other caustics (F. 189). The proper method of applying the paste is on a piece of linen cut to the size of the part to be destroyed. At the end of twenty-four hours the rag is removed; the slough separates after a few days; and the sore is then dressed with *charpie soaked in a solution of chloride of bromium*—

to ℥j in water, ℥xij. The patient takes a pill morning and evening, containing one-tenth of a grain of the chloride. I have tried this plan in one instance of cancer uteri: the local disease seemed to be much diminished by it, but the patient died with all the constitutional symptoms unrelieved. *Sulphate of zinc* has been strongly recommended by Professor Simpson,* who says, that when it is applied to an open and diseased surface it acts as a safe, most powerful, and manageable caustic. It may be employed in the form of a simple fine powder, or as a paste made with glycerine—℥j of the salt to ℥j of glycerine; or as an ointment—℥j to ℥ij of lard. When used in either way to an open or ulcerated surface, the part to which it is applied is rapidly destroyed to a depth corresponding to the thickness of the superimposed layer; the slough usually separates on the fifth or sixth day; and there is left behind, if the whole morbid tissue be removed, a red, granulating, healthy wound, which rapidly cicatrizes. Until all the disease is destroyed, the applications must be repeated. The sulphate of zinc will only act as a caustic to a broken or open surface; hence, when the epithelium is entire, this must be removed by a small blister or by a strong acid. Its application gives rise to local pain and burning in most instances, but never to any constitutional disturbance. The *manganese cum potassa* is recommended by Mr. Weedon Cooke in ulcerated cancer; it is efficacious, causes but little pain, removes all unpleasant odor from the sore, and does not injure the general health. It may be used as a powder, or made into a paste with water; it must be applied in a layer as thick as the tissue to be destroyed. By means of carrot poultices the eschar drops off in three or four days; when, if necessary, the manganese is reapplied until the diseased mass is all destroyed, and the subjacent healthy tissues granulate and cicatrize by means of a slightly stimulating lotion of chlorate of potash. With regard to the *strong mineral acids* and the *concentrated alkalis* but little need be said. If the former be used, sulphuric acid, made into a paste with saffron, will prove

* *Medical Times and Gazette*, 17th Jan., 1857.

the most efficacious ; if the latter, the Vienna paste (F. 196).

Thirdly. There remains for consideration the plan which chiefly has for its object *the promotion of absorption by methodical compression, with or without the application of intense cold.* Pressure is supposed to act beneficially in cancer by diminishing the supply of blood, and hence of nourishment to the tumor; by depriving the cells of the space necessary for their growth ; by injuring them from direct violence; and by promoting their absorption.* Since compression was first proposed by Mr. Samuel Young, in 1809, numerous cases have been treated by it, by different surgeons; and certainly the results seem to have been more favorable than those produced by any other mode. The pressure must be methodically and perseveringly applied ; the most unobjectionable means of applying it being by Dr. Neil Arnott's apparatus, which consists of a spring, an air-cushion supported by a flat resisting frame or shield, a pad, and two belts. "The effects produced by pressure are," says Dr. Walshe, "removal of existing adhesions, total cessation of pain, disappearance of swelling in the communicating lymphatic glands, gradual reduction of bulky masses to small, hard, flat patches, or rounded nodules (which appear to be, both locally and generally, perfectly innocuous), and in the most favorable cases total removal of the morbid production. The relief of pain afforded by the instrument is, without exaggeration, almost marvellous ; this effect being insured by the peculiar softness and other properties of the air-cushion, the medium through which the pressure of the spring is transmitted to the surface."†

The efficacy of intense cold depends on its arresting the circulation, producing some change in the microscopic cells, and in altering the vitality of the part : it not only gives relief from pain, but is said to arrest the progress of the

* On the Treatment of Cancer by Congelation, and an improved Mode of Pressure, separately or combined. By James Arnott, M. D., 2d edit., p. 18. London, 1855.

† *The Nature and Treatment of Cancer*, p. 211. London, 1848.

disease. In cancer of the uterus, the frigorific mixture—equal parts of ice and salt—may be applied by means of a gutta percha speculum, daily, for fifteen or thirty minutes, or even oftener. I have used it in a few instances only; for although I found that it allayed pain, yet it did not seem to possess any efficacy as a means of cure.

4. TUBERCLE.

Tubercle, or tuberculous matter, is the specific product of a peculiar constitutional disease. It is deposited in a fluid state from the capillaries, just as lymph is; the deposit coagulating, and forming a foreign body. Hence it exists in isolable masses, or is infiltrated into the tissues of many different organs; being most frequently found in the lungs, constituting pulmonary tuberculosis, or tubercular disease of the lungs, or phthisis, or consumption, these terms being synonymous. The morbid condition of system which gives rise to this production, wherever it may be deposited, is now usually known as tuberculosis, or tubercular disease; the tendency to it is often hereditary. According to Rokitsansky, pulmonary tubercles are found in two varieties, or in forms intermediate between them; viz., as the gray or miliary, and the yellow tubercles. By some it is supposed that these two varieties merely represent two stages of the same disease. Rokitsansky maintains, however, that they are always different substances; and that although they often coexist in the same lung, yet that they never become transformed the one into the other. Be this as it may, it is certain that the minute structures of both are essentially similar. Of course there has been a vast amount of speculation as to the mode of formation and nature of tubercle. The best explanation, and that to which many authorities, as Lebert, Ancell, and Dr. John Hughes Bennett, subscribe, is that it consists of an exudation of the liquor sanguinis, presenting marked differences from the simple or inflammatory exudation on the one hand, and the cancerous exudation on the other. As the blood is of course dependent for its constitution on the results of the primary digestion in the alimentary canal, on

the secondary digestion in the tissues, and on the healthy performance of the function of respiration, so we must agree with Dr. Bennett that the causes of the tubercular exudation are to be sought in the circumstances which operate on, or influence, those results: "The successive changes which occur for the purposes of assimilation in the healthy economy may be shortly enumerated as follows: 1st. Introduction into the stomach and alimentary canal of organic matter. 2d. Its transformation by the process of digestion into albuminous and oily compounds: this process is chemical. 3d. The imbibition of these through the mucous membrane in a fluid state, and their union in the termini of the villi and lacteals to form elementary molecules: this process is physical. 4th. The transformation of these, first, into chyle corpuscles, and secondly, into those of the blood, through the agency of the lymphatic glandular system: which is a vital process. It is from this fluid, still further elaborated in numerous ways, that the nutritive materials of the tissues are derived, so that it must be evident, if the first steps of the process are imperfectly performed, the subsequent ones must also be interfered with. Hence we can readily comprehend how an improper quantity or quality of food, by diminishing the number of the elementary nutritive molecules, must impede nutrition."*

From the chemical analysis of tubercle, it would appear to consist of animal matter—principally albumen, and certain earthy salts—chiefly the insoluble phosphate and carbonate of lime, and the soluble salts of soda.

For the further consideration of this subject, see the Sections on PHTHISIS, HYDROCEPHALUS, TABES MESENTERICA, &c.

5. SCROFULA.

1. GENERAL OBSERVATIONS.—Scrofula, or struma, is a disease of the constitution manifested by certain external signs, of which swelling of the subcutaneous lymphatic

* On the Pathology and Treatment of Pulmonary Tuberculosis, p. 27. By John Hughes Bennett, M. D., &c. Edinburgh, 1853.

glands, especially those of the neck, is the most conclusive.* Not that engorgements of the lymphatic vessels and glands constitute scrofula, or are always due to it; such enlargements often occur from temporary causes, but they are then easily recognized by their histories and symptoms. It is still doubtful whether scrofula and tuberculosis are different diseases or not; many authorities regarding them as distinct, though they allow that some unknown relation subsists between them. The question is as yet *sub judice*; but it may be mentioned that one of the most recent writers on the matter, Mr. Ancell, regards the disease of the blood which leads to the deposit of tubercle, and that which gives the specific character to scrofulous affections, as essentially the same.

By many authorities it is stated, though the truthfulness of the statement may be questioned, that persons possessing the strumous constitution or diathesis manifest certain peculiarities, such as a coldness of the body; a dull white, but very delicate skin; a rounded graceful outline of face, with a delicacy of feature, and rosy hue of the cheeks, strongly contrasting with the surrounding pallor, and often giving to the countenance, especially in women, a characteristic beauty; hair which is usually blond or auburn; eyes large, blue, projecting, and humid, with the pupils habitually dilated. Moreover it is said that such persons are remarkable for the development of the head, of the *alæ nasi*, and of the upper lip; for the large development of the lower jaw, and the milk-white teeth, which early become carious; that the breath is habitually sour and fetid, the neck long and rounded, the chest narrow and flat, the shoulders high, the abdomen large and prominent, the limbs thin, and the flesh soft and flabby. It is commonly believed that in youth all scrofulous persons manifest great cerebral activity; that they are impatient and passionate; that their intellectual system is largely developed; and that although many have more imagination than judgment, yet some occasionally are capable of sustained mental

* See the Treatise of Mr. Benjamin Phillips, on Scrofula, p. 26. London, 1846.

exertion. There are very few cases, however, where the actual appearances will correspond with this description; the most constant peculiarities are the paleness and coldness of the body, and the tumidity of the abdomen.

As regards *the nature of the scrofulous deposit*, I cannot do better than give the opinion of Hecht, who says: "If we take a large lymphatic gland, altered in structure and converted into a mass of scrofulous matter, the whole mass seems homogeneous, and of the same yellowish or dirty white color; towards the centre the mass is softer, and of a creamy, pulpy appearance. The softened pulp turns litmus paper green; acted upon by boiling water, or acids, it coagulates, presenting no globule either of fibrin or of pus, and is apparently only a mass of coagulated albumen, with an excess of alkaline salts. But when inflammation is excited by its presence, pus may be found mixed with the matter." He then goes on to show, that, in addition to albumen, it consists of gelatine, fibrin, and probably a little stearine.

2. CAUSES OF SCROFULA.—The causes which have been most frequently assigned are hereditary influence, syphilis, bad air, bad food, and a cold and damp atmosphere. As regards hereditary influence, it may be noticed that if by this is meant that there is a certain poison or strumous virus transmitted from parents to children, the position is totally untenable; but, on the other hand, if it be only understood that the children of scrofulous parents are more liable to have the disease developed in them on the application of the exciting causes than the children of healthy parents, as was the opinion of John Hunter, the position is most probably true. That it is not contagious is certain. Many authors have imagined that a syphilitic taint in either parent will induce scrofula in their offspring; while some have even maintained that this disease is only a degenerated species of syphilis. There seems, however, to be no truth in either of these suppositions; scrofula and syphilis being very different diseases, quite independent the one of the other. Neither does the development of struma appear to be influenced by climate or temperature. But it is to *diseased nutrition*, however brought about, that we may refer

the production of scrofula; and it is to insufficient, or innutritious, improper food, that the vast majority of cases of diseased nutrition are due, though it may also arise from breathing a vitiated atmosphere, or from want of cleanliness, and healthy exercise.*

3. PREVENTION.—There are four points to be attended to in the prevention of scrofula. 1. To obtain well-assorted marriages—the marriages of parties in sound health and vigor. 2. Where this disease exists in the parents, or in either of them, great care should be taken to maintain the health of the mother during the period of utero-gestation. She should wear warm clothing, should take regular exercise in the open air, avoid heated rooms and late hours, and have a plain nourishing diet. 3. On the birth of the child, every means should be taken to strengthen its general health, and to counteract the hereditary influence by attention to the food, air, clothing, &c. If the mother be free from the strumous habit, she may suckle her offspring, but otherwise a young and healthy nurse should do so. At the age of nine or ten months the child should be weaned, and fed on cow's milk, a small quantity of light nutritious vegetables, and a little broth. Dr. Paris strongly recommends milk impregnated with the fat of mutton suet, which he orders to be prepared by enclosing the suet in a muslin bag, and then simmering it with the milk. The child should be warmly clothed, should live in apartments where the ventilation is good, should have plenty of exercise in the open air, and once daily should have a cold sea-water bath, or a cold bath

* "In all parts of Europe," says Dr. Baly, Physician to the Millbank Penitentiary, "the proportion of deaths has been much greater among criminals in prison, than amongst persons of a corresponding class out of prison; and the increased mortality is due to various forms of scrofula, and especially tubercular phthisis. The causes which contribute to this result are cold, poorneess of diet, deficient ventilation, want of sufficient bodily exercise, and dejection of mind. In a great number of cases of phthisis in this prison, apparently hopeless, the disease was immediately checked on the release of the prisoners, many of whom *entirely recovered*." Quoted by Dr. William Addison, *On Healthy and Diseased Structure*, p. 48. London, 1849.

with bay salt dissolved in it. 4. In cases where there is no hereditary predisposition, ill-ventilated, damp houses must be avoided; as well as localities generally regarded as unhealthy.

4. CURATIVE TREATMENT.—An account of the superstitious practices—touch of the dead felon's hand, the drinking out of human skulls, the various pilgrimages, and the Royal touch—formerly performed for the cure of scrofula, would form a curious chapter in the history of human credulity.

The agents which are for the most part employed, and which are most deserving of attention, are mercury, iodine, cod-liver oil, the muriates of baryta and lime, &c. *Mercury*, in all its forms, has been freely administered in cases of scrofula. It does not, however, possess any peculiar property of removing this disease; and when administered so as to lower the general powers, whether by profuse purging or by salivation, does much mischief. When combined with other medicines as an alterative, it is often beneficial; especially the bichloride, given in minute doses—such as $\frac{1}{16}$ th of a grain twice daily, with the extract and decoction of sarsaparilla (F. 20, 21, 33), &c. *Iodine* is by some regarded as little less than a specific, and it certainly is a remedy of great value. The iodide of potassium in two, three, or five grain doses, is the best and most extensively used preparation of this agent; or the liquor potassii iodidi compositus of the London Pharmacopœia, in doses of two drachms to one ounce may be employed. Applied externally, as an ointment (F. 306) or as a paint (F. 197), to enlarged glands, &c., it is very useful. Lugol also recommends the application of iodine and its compounds in the form of baths (F. 122). Associated with iron, or quinine, or zinc, its efficacy is in some instances increased (F. 28, 29, 30, 339, and 346). *Cod-liver oil* (oleum morrhue) will often do good in improving the nutrition of strumous patients. It requires to be given for some time, commencing with half a drachm thrice daily, up to half an ounce or more. The *muriates of baryta and lime* have been much extolled, but on insufficient grounds; they are rarely or never used. The whole

class of *tonic medicines* have been recommended ; quinine, steel, and the mineral acids will occasionally be found very useful.

6. CONSTITUTIONAL SYPHILIS.

Constitutional or secondary syphilis may make its appearance sooner or later after the healing of a primary sore ; being due to some morbid condition of the blood which has become tainted by the venereal poison. The longer the duration of the primary venereal sore, the greater the probability of secondary symptoms : moreover, the worse the state of the general health at the time of contracting the primary ulcer, the greater the risk of the constitution subsequently suffering. Many authorities believe that constitutional syphilis may be communicated from an infected to a healthy person, without the intervention of primary disease ; especially where there is frequent contact between two parties. Secondary skin diseases and condylomata may be so communicated from the husband to the wife ; or it is probable that the husband having constitutional syphilis may taint the ovum, and that through the latter the mother may be infected. Tertiary symptoms may appear at a very long period after the primary disease, and generally after the secondary symptoms have disappeared. According to Mr. Parker, the diseases which have been termed tertiary are deep-seated affections of the skin, as tubercles ; and affections of the glands and bones, as periostitis, exostosis, caries, and necrosis. " To these may be added various internal affections, as yet neither well known nor described. M. Ricord has presented to the Royal Academy of Medicine, specimens of tubercles of the brain, which he believes to be of syphilitic origin. The tertiary symptoms are not hereditary, under any specific form of venereal affection. The children of persons thus affected are very commonly scrofulous, phthisical, or predisposed to cancerous diseases. Many of the constitutional forms of disease are capable of propagation by *contact* or *inoculation* ; and in persons cohabiting as man and *wife*, a syphilitic symptom existing in one is very com-

monly produced in the other, in precisely the same form.”* Directly constitutional syphilis manifests itself, attempts should be made to cure it. Pregnancy even is no bar to the treatment; for the disease is much more likely than the remedies to produce abortion.

Symptoms.—Constitutional syphilis very frequently manifests itself by the production of certain cutaneous diseases; by ulcers on the skin; by warts, condylomata, and mucous tubercles; by alopecia or baldness, loss of the eyebrows and eyelashes; by inflammation and ulceration about the root of the nails; by superficial ulcerations on the tongue, lips, or pillars of the fauces; by ulcerations of the larynx; by enlargement of the testicles—syphilitic sarcocele; by diseases of the periosteum and bones; and, in a few instances, by a peculiar form of bronchitis.

The syphilitic cutaneous eruptions are of various kinds. They are generally chronic; of a bronze or copper color; frequently squamous or scaly, and prone to excoriate; sometimes assuming the form of tubercles of a livid or brown color, surrounded by a coppery areola, and having a tendency to degenerate into foul offensive ulcers; while, occasionally, these affections merely take on the appearance of brown or dirty yellow stains. Loss of hair from syphilitic causes seldom occurs without other symptoms; it is especially combined with the formation of scurf on the scalp, and with inflammation of the roots of the nails, so that these latter structures crack and break easily, or even fall off. The syphilitic ulcers of the fauces, tonsils, and pharynx are often excavated, covered by an ash-colored slough, and surrounded by a livid unhealthy appearance of the mucous membrane. Occasionally they slough, and extend rapidly; they give rise to pain, and difficult deglutition; and they are always attended with more or less constitutional disturbance. Ulcerations of the nostrils are also not uncommonly the only symptoms of the general infection of the system; they give rise to offen-

* The Modern Treatment of Syphilitic Diseases, both Primary and Secondary. By Langston Parker, 3d ed., p. 158. London, 1854.

sive and profuse discharges, a marked alteration in the voice, and, if not checked, to disease of the cartilages or nasal bones. Deep fissures, ulcerations, and fungoid vegetations upon the tongue may arise from the poison of syphilis, or from the use of mercury: in the former case there will generally be found other symptoms of this disease, while, in the latter, the submaxillary glands are frequently also swollen and tender. The enlargements of the bones called nodes arise only when the system has been much affected by the poison of syphilis; they are the result of effusion between the periosteum and bone, and are, perhaps, caused by superficial inflammation of the osseous tissue.

Diagnosis.—The longer the interval which elapses between the primary disease and the appearance of the secondary symptoms, the greater the difficulty of diagnosis. It may be of assistance to remember that syphilitic cutaneous affections generally occur in connection with various forms of ulceration about the soft palate and fauces, and that the skin disease often assumes a dusky copper color. When the patient is married, the health of his wife and children will form a guide to a correct opinion.

Treatment.—The remedies required in the treatment of constitutional syphilis are not very numerous, but they demand great caution and discernment in their application. In all cases the use of warm water or vapor baths, once or twice a week, will prove of great service; and, provided they do not induce debility, cannot be productive of any mischief. Opium, also, will be needed when there is much pain, or when there is an inability to sleep at night; and there are few instances which will not be benefited by a plain but nourishing diet, free from stimulants. When the use of mercury is indicated, there are two ways in which this mineral may be introduced into the system, viz: either by inunction with the mercurial ointment, or by the employment of the mercurial vapor baths (F. 127, 128). The latter will often cure cases that have resisted all other plans of treatment. In many chronic cases the bichloride of mercury (F. 20, 49) in small doses, repeated for many weeks, will also be useful. In syphilitic lepra the bromide

of mercury (F. 21) does good ; while in obstinate nodes the iodide of mercury (F. 52) may be tried ; but, as a rule, in diseases of the bones no remedy will prove so valuable as the iodide of potassium (F. 26), especially if warm baths be also resorted to at the same time.

The treatment of this affection by syphilization must be briefly noticed. A few years only have elapsed since Auzias Turenne, in performing some experiments on animals with the poison of syphilis, ascertained that each succeeding chancre produced by inoculation became less and less, until a period arrived when no sore of any kind could be produced by the application of the venereal virus. From this the inference was drawn that, by prolonged inoculation with the syphilitic poison, a constitutional state was produced in which the system was no longer capable of being affected by syphilis ; just as happens in inoculation for smallpox, vaccination, &c. Hence, to obtain perfect syphilization or immunity, an individual must undergo constitutional syphilis ; but he must be forced rapidly through this state by repeated inoculations, in order that his constitution may not be injured.

This practice has found but little favor in our country ; but recently, in France, Germany, and Italy, attention has been paid to it, and important facts brought to light. Sperino, physician to the Venereal Hospital of Turin, published, in 1853, a detailed account of 96 cases of syphilization, of which 53 were examples of aggravated primary syphilis, and 43 of severe constitutional disease. Of the primary cases 50 were cured, 2 failed, and 1 was treated by other means in addition to syphilization. Of the 43 with constitutional syphilis, 26 were treated by syphilization alone, 25 of these being cured ; 17 were treated by syphilization, with mercury or iodine. Sperino inoculates for from six to ten chancres at each sitting ; and allows about three or four days to elapse between each operation. It is curious that the general health does not suffer, but improves during the process of inoculation. The time required to produce immunity varies ; in one case it was obtained after 71 chancres, but this number *seems to be much smaller than usual, for in most instances*

upwards of 300 were produced, the treatment lasting for six months and more. Most of Sperino's patients were prostitutes, and they submitted themselves most readily to the treatment. The disadvantage of the method is the length of time necessary for effectually carrying it out; but then, on the other hand, the immunity produced is thought by Dr. Boeck to last for life.*

7. BRONCHOCELE AND CRETINISM.

1. BRONCHOCELE.—This affection, called *Goitre* by the Swiss, and in this country *Derbyshire Neck*, from its prevalence in some parts of Derbyshire, consists of a morbid enlargement of the thyroid gland. The whole gland may be swollen, or the centre only, or either side. According to Alibert, the right lobe is more frequently affected than the left. The swelling is unaccompanied by pain, and usually causes but little inconvenience beyond the deformity which it produces. Sometimes, however, distressing symptoms are induced by the pressure of the enlarged gland on the surrounding parts; and respiration and deglutition may be rendered painful and difficult by the compression of the trachea and œsophagus. It is much more common in women than in men, almost in the proportion, indeed, of twelve to one. Wherever goitre prevails, popular opinion justly regards the water used for drinking as its cause.

Treatment.—The first point in the treatment of bronchocele is, if possible, the removal of the patient from the infected locality. As regards therapeutic agents, the introduction of iodine by Dr. Coindet, of Geneva, has superseded all other remedies. The liquor potassii iodidi compositus of the Phar. Lond. should be ordered in doses of ʒij to ʒj. The unguentum iodinii compositum, or the pigmentum iodinii (F. 197) should be applied locally.

When these means fail, surgeons have attempted to give

* For further information on this subject, the reader should consult essays by Dr. Radcliffe, Victor de Méric, and a critique in the Half-yearly Abstract of Medical Sciences, vol. xvi. p. 333, 1853; the *Lancet* for 1853, and the British and Foreign Medical-Chirurgical Review, vol. xix. p. 410, April, 1851.

relief by one of three operations. Thus, some cases are recorded as having been cured by the introduction of setons into the diseased gland; while, in other instances, the operation of tying the thyroid arteries has been practised; and these means having failed, attempts have been made to extirpate the gland. To a physician, however, the last operation seems unjustifiable.

2. **CRETINISM**—is a strange disease, a sort of idiotcy, accompanied by deformity of the bodily organs, which has a close but ill-understood connection with goitre. Most cretins are goitrous; but bronchocele may prevail where there are no cretins. The cretin is found principally in the valleys of the Alps, the Pyrenees, and the Himalaya Mountains. His stature is diminutive; his head of great size; countenance vacant, and void of intelligence; tongue large; abdomen sunken and pendulous; legs short and curved. Idiotism of the lowest grade is frequently his lot; sometimes he is deaf and dumb, or blind; and, in short, if neglected, he more resembles an animal than a human being. I say, if neglected; for thanks to Dr. Guggenbühl, the humane and talented director of the establishment at Abendberg, near Interlachen, for the treatment of cretins, it has been proved that even for these apparently hopelessly wretched beings much may be done by pure mountain air, plenty of exercise, a simple nourishing diet into which milk largely enters, the occasional use of such medicines as cod-liver oil, carbonate of iron, phosphate of lime, valerianate of zinc, &c., moral control, and judicious mental training.*

8. HYPERÆMIA.

Hyperæmia, polyæmia, plethora, or fulness of blood, consists either of an excessive quantity of blood, or, as is most commonly the case, of a superabundance of the red globules and fibrin, the quantity remaining unchanged; so that this fluid is, as it were, excessively rich. It is a con-

* An interesting account of this establishment is given by Sir John Forbes, in *The Physician's Holiday*.

dition often plainly indicated by the distension of the capillaries, as observed on the cheeks, lips, and mucous membranes, by the strong, full, resistant pulse, and by the turgid appearance of the veins. Obesity, also, is often an accompaniment, though by no means an infallible sign of plethora.

The *treatment* must consist in the use of low diet, or the employment of non-nutritious substances, in the avoidance of beer and all other alcoholic drinks, in lessening the hours devoted to sleep, and in the use of active exercise. Saline purgatives often do good, while the liquor potassæ (F. 71) is frequently an efficacious remedy. In extreme cases the abstraction of a small quantity of blood may be necessary.

9. ANÆMIA.

Deficiency of blood, poverty of blood, or anæmia, arises generally in cases where there has been deprivation of the proper materials necessary for the formation of healthy blood, as well as in those diseases which are attended with a gradual draining of this fluid, as in persons suffering from bleeding piles, women with menorrhagia or cancer uteri, &c. It may of course be produced artificially by excessive venesection, and such like means. If the blood be analyzed it will be found that the red globules are deficient; so that instead of existing in the proportion of 120 to 130 per 1000, as in health, they are reduced to 80, or 60, or even, in severe cases, to 30.

A peculiar form of anæmia, termed CHLOROSIS, frequently affects young women about the age of puberty; it is generally dependent on, or at least connected with, disordered menstruation, and probably certain sexual causes.

Symptoms.—The chief are: A pale, waxy, blanched appearance of the countenance and integuments generally, as well as of the lips, tongue, and inside of the mouth; a pulse feeble and small; loss of appetite; apparent enlargement or protrusion of the eyeballs; low spirits; and great general debility and languor. Any exertion is attended by *a sense of sinking*, and fainting or syncope, together with *hurried breathing* and palpitation; cedema of the ankles is

often present, and sometimes albuminuria. On practising auscultation over the base of the heart, a loud systolic bruit or bellows-sound will frequently be detected, and may be traced distinctly up the aorta, and in the subclavian and carotid arteries. By placing the stethoscope over the jugular vein, especially over the right, a continuous humming, or cooing, or even whistling sound—the *bruit de diable*—will be heard, a sound which is caused, as Dr. Ogier Ward first pointed out, by the descent of attenuated blood through the great cervical vessels.

Treatment.—The various preparations of iron (F. 336, 345, 349, 367); aloetic purgatives, combined or not with steel (F. 135, 147, 344, 370, 371); good nourishing food; out-door exercise, short of fatigue; the respiration of pure air; and cold bathing, particularly in sea-water, are the remedies we trust to. Under their judicious use, all the formidable symptoms just enumerated entirely disappear.

10. LEUCOCYTHEMIA.

Leucocythemia is a disease of the blood, which, as far as I know, was first described by Virchow, under the name of "Leukhemia," or white blood, an objectionable term, inasmuch as the blood is not white, but of its usual color. Dr. Hughes Bennett has therefore substituted the word Leucocythemia, from λευκος, white, κυτος, a cell, αιμα, the blood; literally white-cell blood.*

Symptoms.—Very little is known of this disease at present; but in cases where it has been found to exist the majority of the patients have suffered from an unusual pallor, like that of anæmia; from great emaciation and debility; from more or less swelling of the abdomen, owing to enlargement of the spleen or liver, or both; from disordered respiration; and from increasing prostration and emaciation, often ending in death. In many cases, moreover, there has been diarrhœa; hemorrhage in some form or other; fever and loss of appetite; and cedema of the legs, anasarca, or ascites, dependent on the abdominal enlargement.

* On Leucocythemia, or White-Cell Blood. Edinburgh, 1852.

Pathology.—This disease of the blood will probably be found to be associated with enlargement of some or all of the following glands: the liver, spleen, thyroid, thymus, supra-renal capsules, and lymphatics.

On examining the blood microscopically, under a magnifying power of 250 diameters, the yellow and colorless corpuscles are at first seen rolling together; the excess in the number of the latter being at once recognizable, and becoming more evident as the colored bodies become aggregated together in rolls, leaving clear spaces between them filled with the colorless ones. A drop of blood taken from a prick in the finger is sufficient for examination. The results of chemical analysis on nine occasions recorded by Dr. Bennett show an excess of fibrin and a diminution of blood corpuscles.

Treatment.—The remedies which would appear to promise the most success are certain tonics, especially iron in various forms, and quinine (F. 333, 334, 336, 350, 354, 367, &c.). Good nourishing food will be indispensable, and cod-liver oil would no doubt be beneficial. The practitioner must, however, in a great measure, be guided by the prominent symptoms in each case.

11. CELLULITIS VENENATA.

By this term is meant that disease which arises from punctures received in dissecting the diseased human body, or some dead animal. The bites of certain venomous reptiles, as the cobra di capello, will also produce it. The poison thus absorbed into the system gives rise chiefly to inflammation of the cellular tissue and absorbents, generally of the wounded limb, but sometimes of remote parts, especially of the lymphatic glands. These inflammations are accompanied by general, often severe, constitutional disturbance; they sometimes cause death in a few days, or even hours; or they end in suppuration or gangrene; always permanently, though at times imperceptibly, injuring the powers of the constitution.

Some dead animal substances or fluids are more dangerous than others, as the serum found in the abdomen after

puerperal peritonitis, and that found after gangrenous inflammation.

Treatment.—Directly the puncture or bite is made, the poison should be drawn from it by sucking or by the application of a cupping-glass, and lunar caustic freely applied; a ligature should also be tied between the wounded part and the trunk. Subsequently, when absorption has taken place, I should treat the constitutional disturbance as I would treat a case of typhus; that is to say, by support and stimulants; hoping by such means to give strength until the force of the poison was expended. Venesection, leeches, and other antiphlogistic remedies, have been employed as a matter of course; very much, it is to be feared, to the sufferer's disadvantage. Opium is to be freely given when the pain is severe; and hot fomentations or poultices applied locally.

12. RHEUMATISM.

Rheumatism is one of the most common, painful, and severe diseases with which, in this country, we are afflicted. It may be described in a few words as inflammation of the fibrous tissue; wherever fibrous textures are found there may be rheumatism. Some physicians have attempted to make a distinction between fibrous and synovial rheumatism; but I agree with Dr. Todd, that the natural history of the disease does not warrant such a distinction, since the synovial membranes can never be affected alone. There are two forms of rheumatism, the acute and chronic.

1. ACUTE RHEUMATISM, OR RHEUMATIC FEVER.—This disease is formidable from the suffering it causes, from the intensity of the fever, and from the damage which is so frequently produced by it to the heart. The earliest *symptoms* of it are usually slight fever, with stiffness and aching pain of the limbs, following exposure to cold and damp. The pain quickly increases, and in a short time is accompanied by swelling and great tenderness of one or more of the large joints, together with much constitutional disturbance. When the disease is established, the patient *presents a pitiable spectacle* of helpless suffering. He is

very restless, yet dare not or even cannot move; the pain in the affected joints is so agonizing, that only the weight of the bedclothes can barely be borne; the skin is generally bathed in sweat, of a disagreeable acid or sour odor; the pulse is full, bounding, and quick; there is constipation; the tongue is moist, but furred; the saliva is acid; and the urine is high colored, scanty, of high specific gravity, very acid, and loaded with uric acid, or more frequently with urates. It has lately been shown that the deposits formerly regarded as consisting of urate of ammonia, have a variable composition; being made up of the urates or lithates of lime, potash, and soda.*

A remarkable feature in this disease is the tendency to metastasis; thus the inflammation may suddenly leave one joint and appear in another, and then in another, afterwards jumping back again to its original seat. But the most serious change is when it shifts its place, or extends to the membranes of the heart. This it is most likely to do in severe cases, when we may suppose the blood to be loaded with *materies morbi*;† in young persons; and when

* Urine containing an excess of urates may be distinguished by its high color, increased density, and turbid appearance when cold, somewhat resembling pea-soup. On applying heat to a portion in a test tube, it becomes bright and clear. Examined by the microscope, an abundant amorphous precipitate is seen.

† Probably lactic acid. Dr. Prout first suggested that the presence of a superabundance of this acid in the system was the cause of rheumatic fever; a view which has been since entertained by most authors. Dr. Richardson has just made some experiments to try whether the hypothesis admitted of any direct demonstration. He injected into the peritoneum of a healthy cat, ʒvij of a solution of lactic acid with ʒij of water. Two hours after the operation the action of the heart became irregular; in four hours more the animal was left for the night; and in the morning it was found dead. The inspection showed no peritoneal mischief, but the most marked endocarditis of the left cavities of the heart. The mitral valve, thickened and inflamed, was coated on its free borders with firm fibrinous deposit. The whole endocardial surface of the ventricle was intensely vascular. On repeating the experiment on a dog, the inspection revealed most striking pathological signs of endocarditis. The tricuspid valve was inflamed and swollen to twice its ordinary

the irritability of the heart is great, as it is after bleeding and excessive prostration. Since, however, rheumatic carditis and rheumatic pericarditis do not differ from simple inflammation of the heart or pericardium, except perhaps in being less fatal, I shall defer further notice of the signs of these affections until treating of the diseases of the heart generally; merely urging here, that as they are very likely to occur, their symptoms should be daily and carefully looked for, in order that early appropriate treatment may be adopted.

Rheumatic fever may also, but more rarely, be complicated with bronchitis, pleurisy, pneumonia, or even with inflammation of the brain or its membranes. Whenever uncomplicated, its average duration is from ten or twelve days to eighteen or twenty. When death occurs, it is almost always from the cardiac inflammation. When recovery takes place after the heart has been affected, the patient has very often a sad time in store for him—future bad health, palpitation, dyspnoea, and dropsy. The great majority of cases of acute rheumatism occur in persons between fifteen and forty years of age.

Treatment.—A vast number of different plans have been recommended in this disease. That which I believe to be the best consists in the use of sudorifics, opiates, and saline purgatives; by which excretion from the skin, kidneys, and intestines is promoted, so that the poison is gradually eliminated from the system. *Venesection* will merely give temporary relief, at the expense of future suffering; remembering also that it increases the irritability of the heart, and consequently predisposes to rheumatic inflammation of this organ, I should, as a rule, never resort to it. *Saline Purgatives* (F. 133, 142, 146), given so as to obtain one free evacuation daily, will always be beneficial; especially after the bowels have been well acted

size. The aortic valve, swollen and inflamed, was coated on its free border with fibrinous beads. The endocardial surface was generally red from vascularity. The pericardium was dry and injected. As before, the peritoneum escaped injury. The joints were not affected, but there was distinct scleratitis in the left eye.

on by a large dose of calomel and jalap. *Opiates* in full doses will be necessary to relieve the pain, and to allay the general irritability; they will also help to produce sweating, and thus aid nature in eliminating the poison by the skin. Two grains of solid opium may be given every night, and five grains of the compound ipecacuanha powder every four hours; the efficacy of the latter will be increased if the nitrate of potash be substituted for the sulphate in making it (F. 202). *Lemon-juice*, in two or three ounce doses, repeated three or four times a day, has been recommended by Dr. Owen Rees, who considers that the citric acid undergoes changes in the stomach, supplying oxygen to such elements as tend to produce uric acid, and inducing thereby the formation of urea and carbonic acid instead. The result of its use, however, has not been such as to make me recommend it; for I have not only found it fail to do good in a few instances, but I have seen alarming depression induced by it. *Neutral salts* are much praised by many practitioners. Thus Dr. Garrod treats all his cases with the bicarbonate of potash, in half-drachm or two scruple doses (F. 70), repeated every two hours, until the patient has been free from all articular affection and febrile disturbance for two or three days; using local depletion over the heart's region if any cardiac disease is threatened or present. Other physicians trust to the nitrate, or the acetate, or the citrate of potash, but in smaller quantities. The *diet* should at first be low, consisting of slops, arrowroot, &c. Directly there are signs of depression, good beef-tea, milk and lime-water (F. 12), or prepared milk (F. 13) may be administered; and, if necessary, wine, especially sherry in soda-water. In the early stages, when there is much thirst, a refreshing saline drink (F. 318, 319, 323) will be beneficial. Moreover perfect rest must in all cases be enjoined, and all sources of mental anxiety should, if possible, be removed.

With regard to the *local remedies*, it may be remembered that great relief is often experienced from wrapping the affected joints in cotton wool and oiled silk, by which a sort of local vapor bath is formed. So, when the wrists or ankles are chiefly affected, I have seen benefit arise from

frequently soaking them in a hot alkaline bath; or from fomenting them with water to which the bicarbonate of soda has been freely added. When the acute symptoms have partially subsided, small blisters, the size of a penny-piece, may be advantageously applied; or the swollen joints may be painted with iodine (F. 197), and then covered with wool.

Supposing any signs of cardiac affection—such as violent and irregular action of heart, præcordial pain, altered character of the sounds, and fever—manifest themselves, what is to be done? Most authors say, apply leeches over the region of the heart, or resort to general bleeding, and quickly get the system under the influence of mercury. If the remarks previously made at the commencement of this section, however, are true, no such remedies will be necessary; and, I believe, it will be better merely to get free cutaneous action by the administration of opium or by the use of the vapor bath, and to support the system. I have only been able fully to carry out this plan in a very few cases of rheumatic pericarditis; but the rapid recovery of these patients, together with the general train of symptoms during the treatment, has convinced me that I am bound to recommend it. Should effusion take place into the pericardium the application of a blister, or of a succession of blisters, will do great good; and perhaps the iodide of potassium may, in certain instances, be beneficial.

2. CHRONIC RHEUMATISM.—This is sometimes the sequel of acute, but more commonly I believe a separate constitutional affection, coming on quite independently of any previous acute attack. It is apt to follow gonorrhœa; hence one variety of this disease has been termed *gonorrhœal* rheumatism. The fibrous textures around the joints, or the fibrous envelops of the nerves, or the aponeurotic sheaths of the muscles, the fasciæ, and tendons, or the periosteum, are the parts which suffer. In any case, there is, at first, little constitutional disturbance; but the sufferer is constantly annoyed, and his existence made miserable with chronic pains, causing him to be restless at night, and destroying all comfort during the day. In some instances, *the pains are worse at night, being aggravated by the*

warmth of the bed ; in others, warmth affords the greatest relief : the former is usually the case when the blood is circulating a poisonous material through the system, as in venereal rheumatism, or in that due to derangement of the digestive organs and secretions ; the latter, in rheumatism of an erratic kind, dependent on cold, &c.

There are two or three different *forms* of chronic rheumatism. Thus, rheumatic inflammation of the lumbar fascia is termed *lumbago* ; the pain is referred to the fleshy mass of muscles on one or both sides of the loins, and is increased by every movement of the back. in *sciatica* the suffering is due to disease affecting the sciatic nerve ; it will be treated of in describing the forms of neuralgia. When the intercostal muscles, or the fibrous fasciæ lining the chest are affected, the disease is termed *pleurodynia*.

The *diagnosis* of chronic rheumatism is generally easy. There are, however, certain painful muscular affections which sometimes simulate it. These pains are familiar to us all as "soreness and stiffness," following upon some extraordinary exertion ; but they are not always as readily recognized when they occur during convalescence from any long illness. Yet it is clear that the mere sitting upright in a chair, without any support for the head or arms, may be as fatiguing to some of the muscles—*e. g.*, the trapezius—of an invalid, as the ascent of Mont Blanc may prove to an ordinary gentleman only accustomed to a daily desultory saunter through the parks. These muscular pains are not uncommon, also, in persons suffering from general debility. Dr. Inman, of Liverpool, in a pamphlet on this subject, states that they are usually described as hot or burning ; they are absent on rising in the morning, and increase with fatigue ; the pain is referred to some muscle or its tendon, and is relieved by relaxing or supporting this muscle ; the pulse is generally weak and fast, but is unaffected by the pain ; and the patient frequently suffers from cramps. The diagnosis is important, because if we fail to administer ferruginous tonics and nourishing diet, or to afford proper rest and support to the weak muscles until *they regain their tone*, we shall fail to give any relief to

the poor sufferer; who possibly, in his contempt for medicine, will hasten to try the good diet and pure air of some hydropathic establishment, and then circulate reports of his extraordinary cure, "after being given over by the faculty."

Treatment.—It is always necessary to attend to the general health, as by doing so the disease will often be materially mitigated. There are several special remedies which give relief, the best being the iodide of potassium (F. 23). If the secretions are very acid, liquor potassæ should be combined with it (F. 24). The *mistura guaiaci*, cod-liver oil, cinchona, liquor potassæ and bark, the oil of turpentine, colchicum, sarsaparilla, sulphur, and the hydrochlorate of ammonia with bark, have all their advocates (F. 25, 26, 38, 56, 58, 351). When the symptoms are very chronic, the alkaline waters of Vichy do good; or, if there is constipation in addition to rheumatism, the antacid springs at Carlsbad may be advantageously visited.

Hot water, or hot air, or vapor baths—either plain, or alkaline, or medicated with sulphur—are often very serviceable in this disease, especially when the pains are severe. During the intervals of the attack the tepid salt water sponge bath should be employed every morning.

Local applications to the painful parts, such as blisters, iodine paint, and stimulating liniments (F. 197, 258, 261) often give temporary relief. In lumbago, a large belladonna plaster, or the *emplastrum ferri*, applied over the whole loins, will be productive of great comfort. Dr. O'Connor recommends the external application of sulphur—either powdered or as an ointment—with bandages of new flannel; the latter being again covered with oiled silk, to increase the warmth, and obviate any disagreeable smell. When the pains are decidedly relieved by heat, acupuncture is said always to give ease, and often to effect a cure; but I have had no experience in its use. All sufferers from chronic rheumatism should wear flannel, and beware of exposure to damp and cold. They should also be careful in their diet, as I am convinced that many paroxysms of this disease are brought on by disorder of the digestive organs.

13. GOUT.

Dr. Cullen has defined gout as "an hereditary disease, arising without any obvious external cause, but preceded by some unusual disturbance of the stomach; fever; pain affecting some joints, but especially those of the feet and hands; returning at intervals, and for the most part alternating with affections of the stomach, or of some other internal structure."* The ancient name of this disease, *podagra*—foot pain—sufficiently indicates its most frequent seat.

Symptoms.—The earliest signs of an approaching fit of gout are, dull pain in the left side of the chest, and inability to lie comfortably on that side; with, in many instances, fluttering irregularity, or intermission in the heart's action. There are also symptoms of impeded cutaneous circulation, the skin being dry and hot, and sometimes affected with scaly eruptions, or with urticaria. After a short lapse of time the attack comes on, generally at night with severe burning, throbbing pain in the ball of the great toe, or the heel, or the fascia covering the instep of the foot, or the thumb. There is often a slight rigor succeeded by heat. The pain is most excruciating, but it abates towards morning, and the patient falls asleep. On awaking, the affected part is found red, swollen, and exquisitely tender to the slightest touch; the sufferer is feverish, restless, very irritable, and much depressed; his tongue is furred; his bowels are constipated, and his urine will be found high colored, acid, and loaded with lithates, or with lithic acid, and sometimes with phosphates. In a few days, sometimes almost in a few hours, the attack passes off, and the patient is well, often better indeed than he has been for a long time previously. But the disease will return. At first, a happy time of two or three years may elapse; with each paroxysm, however, the interval will shorten, until at length, perhaps, the patient is hardly ever free from an attack, except it may be for a few weeks in summer. At

* *Practice of Physic*, 4th edit., vol. ii. p. 52. Edinburgh, 1784.

first, also, it confines itself to a single joint ; by degrees, several joints in both feet or in the hands suffer. Deposits—called tophi, tophaceous deposits, or chalk-stones—are formed around and outside the joints, of a material resembling moist chalk, and consisting of lithate of soda ; small spots of this substance may often also be seen just beneath the skin of the auricle of the ear.

Complications.—In one variety, called by Cullen *retrocedent* gout, metastasis occurs from a joint to some internal organ, more especially to the stomach. In such cases there is sickness and vomiting, hæmatemesis, violent spasmodic pain in the stomach, and great distress and anxiety. When the retrocession is to the brain, it produces intense headache, lethargy, and sometimes apoplexy or paralysis ; when to the heart, dyspnoea and syncope.

Diagnosis.—The diagnosis of acute gout is simple enough. But it must be remembered that the gouty diathesis may be developed in individuals who never suffer from its local manifestations ; so that many obscure pains, which are often regarded as local neuralgic diseases, are really mere results of the poison of gout in the system. This has been particularly insisted upon by Dr. William Gairdner, who believes that the strumous is not more frequent than the gouty habit.*

When the health and strength have been much diminished by frequent attacks of regular gout, decided paroxysms are rarely experienced ; but the patient suffers severely and frequently from the disease in its irregular forms. The symptoms are then chiefly as follows : Painful dyspepsia, with heartburn ; flatulency and constipation ; frequent attacks of faintness and palpitation of the heart ; nervous weakness, and great irritability of temper, so that the patient is feared by his relatives, who too seldom make allowance for his sufferings ; pain in the occiput and nape of the neck ; diminished strength, so that a little exercise fatigues, and noise or bustle alarms ; a desire for quiet and seclusion ; susceptibility to every atmospheric change ; and frequent annoying neuralgic pains. As these symptoms

* *On Gout, &c.*, 2d edit., p. 4. London, 1851.

continue, the debility becomes greater, until the entire system is ruined, and the patient either dies from apoplexy or from hydrothorax, caused by the disturbance of the heart; or from ascites, due to disease of the liver and kidneys; or even, perhaps, suddenly from profound syncope, or he gradually sinks, exhausted and imbecile.

Causes.—Women are much less liable to this disease than men. It generally begins between thirty and forty years of age. It is often hereditary, but more frequently acquired by a luxurious mode of living, sedentary habits, and over mental toil and anxiety, especially when stimulants are resorted to for the purpose of making this toil more supportable.

Dr. Garrod has demonstrated the existence of uric acid in the blood of gouty people, and he seems to think that this agent is indeed, in a great measure, the *materies morbi*.^{*} Certainly the benefit which arises from the use of colchicum confirms this view, if it acts, as it probably does, by increasing the discharge of urea from the system, such increase being accompanied by a decrease of the lithates in the urine; urea and uric acid being plausibly regarded as correlative and vicarious substances.

Treatment.—The treatment of gout naturally divides itself into that proper during an attack, and that to be adopted in the interval. That this malady is curable there is no doubt; though it has been—and as Dr. Gairdner insists ever will be—the *opprobrium medicorum*, if extirpation by means of the medicines of the Pharmacopœia be

^{*} *Dr. Garrod's Plan of Ascertaining the Presence of an Abnormal Quantity of Uric Acid in the Serum of the Blood.*—Take about ziss of the serum and place it in a flat glass dish or watch-glass. To this add fifteen drops of acetic acid of the London Pharmacopœia, and put in two or three threads of cotton, or one or two ultimate fibres from a piece of unwashed huckaback. Allow the glass to stand on the mantel-piece, or on a shelf in a warm room, for from twenty-four to forty-eight hours, until its contents set, from evaporation. If the cotton fibres be then removed and examined microscopically with an inch object glass, they will be found covered with crystals of uric acid, if this agent be present in the serum. The crystals form on the thread somewhat like the crystals of sugar-candy on string.

only aimed at. The fit may be mitigated, shortened, and often cut asunder by drugs; but only temporary relief from this source must be looked for.

It is generally considered that *bleeding* during an attack is unnecessary. Dr. Gairdner well observes: "I am convinced that bleedings to such an amount as is necessary to subdue inflammation, are much to be avoided in gout. Those who prescribe them will not fail to find out, in a very short time, particularly in London practice, that they have sacrificed their best resource in the cure, namely, the strength and stamina of the patient; and have made a lengthened and distressing case, where they meant to make a short and brilliant cure." Although, however, depletion is in every way contra-indicated, yet this physician states that he has often found a very small bloodletting (three or four ounces) productive of the greatest good by relieving the overloaded heart and congested vessels; but I would advise that even this be practised with caution, though undoubtedly in many instances, when prudently used, it will be beneficial. *Laxatives* must almost always be employed; not violent, but mild warm aperients, such as aloes, senna, rhubarb, jalap, &c. The compound gentian mixture will agree well; or Formulæ 136, 137, 138, 369. With respect to *colchicum*, there can be no doubt that it may be regarded as a specific for the gouty paroxysm. It ought not to be administered until the bowels have been well opened; and it must be given not (as often recommended) so as to gripe and purge, but in small doses easily borne without pain or inconvenience. Ten or fifteen minims of the wine three times a day, or Formulæ 25, 35, 324, 335, will suffice. The affected limb must be kept elevated and warm; and the painful part should be covered with a poultice, on which some extract of belladonna may be spread, or some tincture of opium sprinkled.

But the most important question is—How are we to prevent the return of gout? Clearly, by enforcing the observance of a well-regulated diet; by exchanging a life of indolence for one of bodily activity; by adopting early and regular hours; by avoiding too great sexual indulgence; as well as by omitting all severe mental application,

and by the aid of medicine. Starving the disease won't cure it. An animal and vegetable diet should be used; the point is to take care that, both as regards quantity and quality, the stomach can digest and can consequently extract healthy chyle from the materials put into it. Spirits, beer, and our heavy wines—especially port, are injurious; brandy and water is sometimes allowed, but wrongly. It is probable, on the other hand, that some light wines, such as claret, hock, a little good champagne, &c., may be of service rather than otherwise. The best medicines will be an occasional mild purgative, and some of the neutral salts frequently used. The citrate, tartrate or phosphate of potash, are valuable remedies, taken in very small doses, in half a pint of water, once or twice a day; or a bottle of Vichy water may be drank in the twenty-four hours; or a tumblerful of a weak infusion of the leaves of the common ash may be taken twice or thrice daily. In the latter periods of gout, or when the disease lingers about the system, tonics, such as quinine and iron, do much good. When gout attacks the stomach, an emetic should be given, if any suspicion exist that this viscus is loaded; followed by a sinapism or turpentine stupe to the epigastrium. If these means fail, I should cautiously give a little brandy and water, or some tincture of opium, or the liquor opii sedativus, with some sulphuric ether (F. 272, 274).

The collections of chalk-stones should not be opened. Mr. Spencer Wells says that they may be often dispersed by the administration of the iodide of potassium, which possesses the power of dissolving urate of soda; local friction with the same salt (F. 259) will often do good. After an attack of gout a wise patient will take a holiday. A visit to some of the mineral waters; to Bath, Buxton, Cheltenham, or Leamington; or for a greater, and therefore perhaps better change, to Wiesbaden, Vichy, Carlsbad, or Aix-la-Chapelle, will be productive of the greatest benefit.

SECTION II.

FEVERS.

THE best definition of fever is perhaps a modification of that by Cullen: After a preliminary stage of languor, weakness, defective appetite, and some degree of chilliness or shivering, there is acceleration of the pulse, increased heat, great debility of the limbs, and disturbance of most of the functions, without any primary local disease. Much has been written on the classification of fevers, each author having some favorite arrangement, which does not always simplify the subject. In order to be as clear as possible, I shall consider the different varieties of fever according to the following plan:—

1. Continued Fever.
 - a.* Common Continued Fever.
 - b.* Typhus and Typhoid Fevers.
 - c.* Plague.
2. Intermittent Fever.
 - a.* Quotidian.
 - b.* Tertian.
 - c.* Quartan.
3. Remittent Fever.
 - a.* Infantile Fever.
 - b.* Yellow Fever.
4. Eruptive Fevers.
 - a.* Smallpox.
 - b.* Cowpox.
 - c.* Chickenpox.
 - d.* Measles.
 - e.* Scarlet Fever.

1. CONTINUED FEVER.

Continued Fever is so called from the fact that it pursues its course without any well-marked remissions.

a. COMMON CONTINUED FEVER, OR FEBBRICULA—may be defined as a fever consisting of a stage of chilliness or rigor, succeeded by great increase of heat, with a frequent hard pulse, redness of the urine, little disturbance of the mental faculties, and tending usually to terminate by sweating. It commences for the most part without any warning, the patient being suddenly seized with lassitude, disinclination for bodily or mental exertion, loss of appetite, sickness, headache, dull aching of back and limbs, coldness of the surface, especially of the back, and often shivering. At the end of a few hours, or sometimes days, the chilliness passes off, and the skin becomes dry and hot; the pulse is hard, sometimes full and bounding, often small, wiry, and rapid, 100 or 120, or even 130, in a minute; there is increased headache and restlessness; a dry and furred tongue; urgent thirst; constipation; and the urine is scanty and high colored. Moreover, the patient usually complains of pains in his limbs, or of a feeling of soreness over his body; he rapidly emaciates; his countenance becomes pale and haggard; he may have slight delirium; and he seems very seriously ill to his friends. An exacerbation or aggravation of all the symptoms frequently occurs towards night, with a slight remission at the approach of morning, when sleep is often obtained. These symptoms usually continue for three or four days, when, frequently on the fourth day, sometimes on the fifth or sixth, the tongue becomes moist; the skin gets less harsh and dry; the headache and pains in the limbs abate; and then a profuse sweating follows, which proves the natural crisis or termination of the disease, leaving the patient languid and exhausted, but with a pulse of the natural standard, and a complete freedom from the fever. Convalescence gradually and slowly takes place, some weeks often elapsing before the patient *regains his flesh and strength*. Relapse, too, is common, *occurring generally about the fourteenth day*.

Common continued fever is seldom attended with danger, and is not contagious. Nosologists have divided it into different classes, according as one particular organ has been more affected than another; thus in some books we find unnecessary distinctions into brain, catarrhal, gastric, mesenteric, and bilious fevers.

Treatment.—All fevers seem disposed to run a certain course, and to terminate naturally in the re-establishment of health when uninterfered with by art. But, as in the treatment of all diseases, there are certain general objects, called the *indications of cure*, which must be kept in view. In fever these indications are: 1. To moderate, where necessary, the violence of arterial excitement by saline laxatives and low diet; 2. To support the powers of the system; 3. To obviate local inflammations and congestions; and, 4. To relieve the urgent symptoms. It was well observed by Pitcairn: "I do not like fever-curers. You may *guide* a fever; you cannot *cure* it. What would you think of a pilot who attempted to quell a storm? Either position is equally absurd. In the storm you steer the ship as well as you can; and in a fever you can only employ patience and judicious measures to meet the difficulties of the case."

b. TYPHUS AND TYPHOID FEVERS.—In systematic treatises on medicine, these fevers have hitherto been generally confounded together, and regarded as merely two stages of the same affection, being frequently described as typhus, or low nervous, or jail, or hospital, or camp, or malignant fever. There appear good grounds for believing, however, that they are essentially distinct diseases, attended by different important symptoms, and due to different blood poisons. They commence much in the same way, and at first present the same features, as common continued fever, and, like it, they occasionally become complicated with inflammation of the brain or its membranes, with bronchial congestion, or even with pneumonia. But they differ from febricula thus: instead of terminating in the crisis of sweating, in typhus and typhoid fever the symptoms increase in severity; the febrile action becomes much more intense; in each case the pulse becomes *more frequent*, weaker, and more compressible; the tongue grows drier and browner; certain eruptions

show themselves; more sordes, and of a darker color, accumulate on the teeth and lips; the hands are moved restlessly to and fro;* the feces are often passed involuntarily; bed-sores are produced unless great care is paid to keeping the patient clean and dry, &c.; delirium ensues; there is great prostration of the vital powers; and often a strong tendency to death by exhaustion or coma.

In *typhus*, the eruption consists of a mulberry-rash, coming out at the beginning of the second week, and gradually fading away, without any replacement by a fresh crop; the general hue of the skin being at the same time dusky and mottled. In *typhoid fever*, the eruption is formed of rose spots, appearing upon the thorax, back, and abdomen at the end of the second week; being thinly scattered, so that they often require to be carefully looked for, and even then, probably, are not found in at least twenty per cent. of the cases; and then they fade and gradually give way in one place to a new and equally sparing crop on another part. In *typhus*, diarrhœa seldom occurs, and hemorrhage from the bowels never. In *typhoid*, diarrhœa is very common, and there is hemorrhage from the bowels in about one case out of every three. In an excellent monograph on these fevers, by Dr. Jenner, published in 1850, this gentleman shows that in all the fatal cases of *typhoid fever* which he examined, the agminated glands, or Peyer's patches, situated in the ileum, were found ulcerated, the ulcerations increasing in extent as they reached the ilio-cæcal valve; in a few instances, also the solitary glands were ulcerated; and one-eighth of the cases recorded died from extension of the ulceration, with perforation of the intestine. As regards the cases of *typhus*, ulceration did not exist in a single instance. *Typhus* may

* These movements of the hands were well described by Hippocrates more than 2000 years ago: "I have made these observations upon the movements of the hands. In acute fevers, in peripneumonias, in phrenitis, and in headache, the hands moved to and fro before the face, hunting through the void, as if gathering bits of straw, picking at the coverlet, or tearing objects from the wall, are all so many bad and deadly symptoms."—*The Book of Prognostics*.

occur at any age, while *typhoid fever* rarely, if ever, attacks persons after fifty, and is most common in youth; the former is much less dangerous than the latter; and, lastly, relapses do not occur in *typhus*, while they are common in *typhoid*. Both diseases are contagious, but it is probable that each propagates itself, and not the other; an attack of the one does not act as a preventive to infection by the other at any future period. In *typhus*, the danger increases until the end of the second week, when the disease reaches its maximum; in *typhoid*, the maximum is not reached for at least a week longer. In either case it occasionally happens that the patient falls a victim to the disease at the very onset; knocked down and killed at once, as it were, by the virulence of the poison.

Treatment.—Where possible, choose for your patient a large well-ventilated apartment, free from bed and window curtains, carpets, and all superfluous furniture. The chloride of lime, or a weak solution of the chloride of zinc may be used as a disinfectant. A fire in the room acts as a ventilator. Forbid all unnecessary intercourse between the patient and his friends, and select a trustworthy nurse. In the early stages beware of doing too much, of interfering too actively with Nature. Remember we cannot cure these maladies any more than we can cure smallpox or measles; our aim must be to keep our patient alive until the fever poison has expended itself. In opposition to this opinion, however, I must mention that Dr. Goolden, Physician to St. Thomas's Hospital, informs me that, after more than ten years' experience, he regards quinine in large doses as almost a specific for cutting short cases of typhus and typhoid fever. He gives ten grains in solution with a few drops of diluted sulphuric acid, every two hours, until an effect is produced, *i. e.*, until either the fever is lessened, or cinchonism is induced; and he has thus continued it for three days. He states also that it may be given even if there be diarrhoea with bloody stools; that he has never seen it do harm; and that it has saved hopeless cases. Quinine, when thus administered, acts as a depressant; hence the patient's powers must be supported

with beef-tea, and wine or brandy.* Dr. Brinton, Physician to the Royal Free Hospital, thinks it very advantageous, when the patient is seen early, to commence the treatment by the administration of an emetic,† the ipecacuanha wine in doses of one ounce being preferable to antimony or the powdered ipecacuanha: at the same time a purgative, to thoroughly clear the intestines, will often be useful. All other medicine had better be avoided. At this stage the patient's uneasy sensations will be much soothed by sponging the surface of the body with cold or tepid water. Dr. Armitage speaks highly of the use of cold affusion, especially where there is a tendency to stupor, or where the delirium threatens to merge into coma: when, on the contrary, there is a great degree of irritability, he has found the warm bath, 93° to 95°, prolonged for three-quarters of an hour, very useful. In all cases a free supply of toast-water, barley-water, or plain water may be allowed; and following Dr. Watson's advice, I often order chlorate of potass ʒj, in one pint of water, to be taken daily as part of the patient's drink. The diet should be restricted to milk, farinaceous food, and thin broth.

Directly the powers of life begin to fail, as soon as there is signal loss of strength, a dark-brown tongue, and a feeble pulse, a stimulating plan of treatment should be commenced, by ordering strong beef-tea, with ammonia and sulphuric ether, or wine, or the *mistura spiritus vini gallici* of the London Pharmacopœia, or brandy. The last is, in my opinion (having been taught its value by Dr. Todd), the agent generally to be preferred.‡ It should be given in small quantities—ʒij to ʒss, or even ʒj—in water or beef-tea, every two hours, or every hour, or even—in bad cases—each half hour; the effect produced being closely watched; and its repetition guided by such effect,

* Dr. Dundas, of Liverpool, has also given evidence in favor of Dr. Goolden's views in his work on Fever.

† Dr. Brinton on the Treatment of Fever.—*Lancet*, 17th December, 1853.

‡ See an abstract of eighteen cases of typhus, treated by brandy, in King's College Hospital, by Dr. R. B. Todd.—*Medical Times and Gazette*, 27th August, 1853.

remembering that severe febrile symptoms do not contraindicate it. Where there is much irritability of the brain, a well-timed dose of opium will do wonders, especially when combined with the application of some cold lotion (F. 255) to the shaven scalp; if there be delirium threatening to merge into coma, the opium may be guarded with a small dose of ipecacuanha, or perhaps even of tartar emetic, as recommended by Dr. Graves. Occasionally serious chest symptoms arise, and materially increase the danger: these complications must not interfere with the treatment, however, but rather must be taken as an indication, I believe, that more stimulants are needed. I am sure that I have seen fever prove fatal, because the practitioner has thought that pneumonia was also present, and has been consequently afraid to give wine or brandy. In typhoid fever, with much abdominal pain and tympanitis, relief will be given by the frequent application of turpentine stupes—flannel wrung out in hot water and sprinkled with turpentine. The diarrhoea will be best checked by F. 111, or the enema opii of the London Pharmacopœia may be very useful. Under this management, the patient will often remain in a very precarious state for some days; but at last begin very gradually to recover, sleeping much as he improves.

During convalescence great care will be required to prevent a relapse; the return to a generous diet must be very gradual, no solid animal food being allowed till the tongue becomes clean and moist, the pulse soft, and all feverish excitement has vanished; until which time, also, the patient should not be allowed to leave his bed, nor even to sit up much in it. Not a few cases have occurred of patients convalescent from acute disease having an attack of fatal syncope, from too soon assuming the erect or semi-erect posture.

c. PLAGUE.—The plague, or pestis of Cullen, though generally classed among the exanthemata, is said to be, strictly speaking, a continued contagious fever, bearing a slight resemblance to severe typhus. As it is now a disease exclusively of Eastern occurrence, it is only necessary to briefly mention it in these pages. It has been defined

by Dr. Brown (art. Plague, *Cyclopædia of Practical Medicine*) as "an exanthematous disease; the eruption consisting of buboes, carbuncles, and pustules, white, livid, or black; and generally attended with malignant and very fatal fever." It produces at once great restlessness; extreme and rapidly increasing exhaustion; an indescribable feeling of oppression about the præcordia; fever; nausea and vomiting; emaciation; bleeding at the nose; swelling of the tongue; laborious breathing; darting pains in the axillæ and groins, with large buboes, carbuncles, &c.; constipation; and sometimes suppression of urine. The powers of life soon give way, and death either ensues without a struggle in two or three days, or is ushered in by an attack of convulsions. This intense form of the disease is generally observed at the commencement of an epidemic; but after a time a milder—but still dangerous—variety sets in. When recovery is going to take place, profuse sweats occur about the fifth day.

At the time this fearful pestilence—described by Heberden as the Black Death—desolated Europe, Asia, and Africa, in the fourteenth century, the mortality must have been immense; for it has been computed that Europe alone lost 25,000,000 of inhabitants.

2. INTERMITTENT FEVER.

Varieties.—There are three species of intermittent fever or ague, viz., *Quotidian*, *Tertian*, and *Quartan Ague*, of which the tertian is the most common. When the paroxysm occurs at the same hour every day, it is called quotidian ague; when every other day, tertian, though secundan would be more appropriate; and when it is absent for two whole days, and then recurs, quartan. In the first species, the interval is twenty-four hours; in the second, forty-eight; in the third, seventy-two. The time between the commencement of one paroxysm and the beginning of the next is termed the *interval*; that between the termination of one paroxysm and the commencement of the next, the *intermission*. In quotidians, the paroxysm occurs, for the most part, in the morning; in tertians, at noon; in quar-

tans, in the afternoon. The first is most common in the spring; the second, in the spring and autumn; the third, in the autumn.

Causes.—The *predisposing causes* of ague are debility, and the circumstance of once having suffered from it. The *exciting cause* consists of certain emanations or invisible effluvia from the surface of the earth, known as malaria. These effluvia or miasms emanate chiefly from marshy lands, and are supposed to be due to the decomposition of vegetable matter. It is worth remembering that malarious districts are most dangerous at night, and that this poison lies low; or, as Dr. Watson says, “loves the ground.” When the poison has been imbibed, it may remain latent in the system for some weeks, or even months; a point necessary to remember in the diagnosis of obscure cases where the ague fit is not well developed.

Symptoms.—An ague fit is composed of three stages—the cold, hot, and sweating. The *cold* stage is ushered in with feelings of languor and chilliness, though the heat of the body may not be really lessened; then sensations as of streams of cold water running down the back are complained of, and shivering; the skin is shrivelled, and the papillæ rendered prominent—goose skin or cutis anserina; the teeth chatter, and the whole frame is shaken; there is exhaustion; often urgent thirst; the countenance appears anxious, the features shrunk and pale, and the eyes dull and hollow; the pulse is small; the respiration hurried and oppressed, and there is a peculiar mental irritability. The duration of this stage varies from half an hour to four hours, and is gradually succeeded by the *hot* stage, which is one of reaction. The surface of the body becomes dry and intensely hot, the temperature being raised considerably above the natural standard; the mouth is parched; there is excessive thirst; frequent bounding pulse; a painful sense of fulness in the head, and great restlessness, general uneasiness, and sometimes delirium. This condition continues rarely less than three, or more than twelve hours, and then follows the *sweating* stage, commencing with perspiration appearing first on the forehead and breast, and gradually extending over the whole body. The pulse and

breathing become natural; the headache, heat of skin, and thirst abate; the bowels and the kidneys act freely; and all the distressing symptoms are relieved, so that the patient, if the case be recent, often feels in perfect health.

Disease of the spleen is a very frequent concomitant or result of intermittent fever. It is found enlarged, sometimes to a great extent, and occasionally indurated; it is popularly spoken of in this condition as *ague cake*. So, less frequently, morbid changes occur in the liver, giving rise to depraved secretions and disturbance of all the digestive organs.

Treatment.—When the patient is obliged to remain in a malarious district, the difficulty of curing ague will be much increased. In the cold stage, warm diluent drinks, as barley-water, weak tea, or weak negus, or white-wine whey, may be freely allowed, while the application of external warmth is to be assiduously employed by means of warm clothing, hot bottles to the feet, and hot-water or hot-air baths. The latter may be easily prepared by means of a long wicker-work cradle, closed at one end by a board. This is laid over the patient and covered with blankets; a curved tin tube is then passed through a hole in the centre of the board, the other end of the tube expanded into a bell looking downwards, and having a spirit lamp placed beneath it; the air under the wicker work soon becomes very hot. An opiate given a little before the cold stage is often beneficial. During the hot stage, an opposite plan should be pursued, cooling drinks given, and the surface of the body sponged with tepid or cold water. When the hot has subsided into the sweating stage, the action of the skin should be encouraged by tepid drinks.

Purgatives should always be given at the outset; four or six grains of calomel, and the same of rhubarb, followed by an aperient draught. The bowels having been thoroughly emptied, the use of one of the two specific remedies for ague—bark and arsenic—may be commenced. The best plan is to give two or three grains of the disulphate of quinine in the compound infusion of roses every four or six hours during the intermission, taking care to continue its use for some short time after an apparent cure has been

effected. If it be desirable, on account of its cheapness, to employ arsenic, F. 41 will be found a convenient preparation. The salt of the willow bark (salicine) has been recommended as a substitute for quinine; but it is by no means as efficacious. In cases of enlargement of the spleen, great benefit will be derived from a combination of quinine and sulphate of iron, perseveringly used (F. 336), or, perhaps, from the bromide of potassium (F. 43).

3. REMITTENT FEVER.

a. SIMPLE REMITTENT FEVER.—The symptoms of remittent bear a resemblance to those of intermittent fever, with this difference, that in the intervals there is no cessation of the fever, but simply an abatement or diminution. The period of remission varies from six to twelve or fourteen hours, at the end of which time the feverish excitement increases, such increase being often preceded by chilliness and rigors. The remittent fever of hot climates is characterized by the intensity of all the symptoms, and by the constant occurrence of particular complications. Thus, the fever of Sierra Leone is ushered in by violent pain in the liver, followed by determination of blood to the head, and coma.

Symptoms.—The paroxysm of remittent fever commences with languor, lassitude, mental depression, a feeling of cold down the back, and headache. To these symptoms soon succeed delirium, nausea, vomiting—generally of bilious matter; sense of pain at the epigastrium; signs of pulmonary congestion, such as dyspnoea, a feeling of oppression at the chest, cough, and a livid color of the countenance; the pulse is often frequent and full; the skin is hot, and the tongue dry and furred. The urine is often scanty, high colored, and loaded with lithates.

The remissions usually occur in the morning; the principal exacerbation generally takes place towards the evening, and continues for the greater part of the night.

Treatment.—The principal indications to be followed are the reduction of the general fever, the prevention or removal of congestion or inflammation of the brain and its

membranes, as well as the prevention of inflammatory action in the liver, stomach, and intestines. (See *Remarks on the treatment of inflammation.*)

b. INFANTILE FEVER.—Simple or remittent fever in children occurs in two degrees, in a mild and in a severe form. In cases of a *mild* kind, the disease comes on gradually; the child first loses its cheerfulness, its appetite fails, and it suffers from urgent thirst; during the day it is listless and fretful, and though drowsy towards evening, yet its nights are restless, and it has no sound refreshing sleep. On these symptoms attracting attention, the skin is found hot, and at some hours of the day dry, at others covered with perspiration; the bowels are generally loose, the evacuations being unhealthy and offensive; sometimes there is obstinate constipation. In the second week the symptoms increase; the child passes very bad nights, screams and starts in its sleep, suffers much from thirst, and occasionally has slight delirium; there is exacerbation of the fever towards the evening, with remission as the morning approaches; occasionally there is a second though less severe exacerbation about eleven o'clock in the morning. In mild cases there is seldom any rash; if any appear, it will be at this time. The skin of the lips, face, and fingers, becomes dry and rough, and the child is constantly picking it. Towards the end of the second or the beginning of the third week, the symptoms begin to abate, and day by day the child improves in health, although some time often elapses before convalescence is completely established. In severe cases, the symptoms just enumerated commence more suddenly, and are more strongly marked; there is frequently a scanty eruption, which appears between the sixth and tenth days. As the disease progresses, the restlessness and delirium become gradually aggravated, the evacuations are passed unconsciously, and the child becomes much emaciated; until, when apparently in the worst possible condition, slight signs of amendment show themselves, followed by daily improvement. The cases which terminate fatally are few in number.

Treatment.—Our object must be, as in the treatment of fever in the adult, to enable our patient to bear up against

the disease. At first, medicine is little needed; toast-water or plain water may be allowed rather freely as a drink; and the use of the tepid bath every morning, or frequent sponging of the body with lukewarm water, will be beneficial. The unhealthy diarrhoea will be best relieved by castor oil, followed by small doses of the hydrargyrum cum creta, and Dover's powder (F. 36). When the vital powers need support, good beef-tea, chicken-broth, and wine will be necessary; or a stimulant draught (F. 342) may be ordered in place of the wine, or, if necessary, to alternate with it. Dr. Stieglitz, of St. Petersburg, strongly recommends F. 343, where there is great depression. During convalescence, the food must be nourishing, but very digestible. Change of air, especially removal to the sea-side, will prove of great advantage.

c. **YELLOW FEVER.**—This is a disease of not unfrequent occurrence in the West Indies, Africa, the southern parts of Spain, and some parts of America. It has been described under the various names of *Bulam Fever*, *Mal de Siam*, *Typhus Icterodes*, &c. It occurs, like all other fevers, in different degrees of severity; at one time it attacks only a few individuals sporadically, at another period it prevails epidemically; its outbreaks are generally preceded by some unusual meteorological conditions; and it is still a matter of dispute whether it be contagious or not.

The striking features of this fatal disease, in addition to the general pyrexia, are the yellowness of the skin; severe headache, referred to the forehead and bottom of the orbit; mental and bodily prostration; and great irritability of the stomach, the matter vomited being at first slimy and tasteless, but gradually assuming the appearance of coffee-grounds, when it is called the *black vomit*. The dejections generally have a tarry appearance. There is often suppression of urine. The usual duration of the fever is from three to five or even seven days. When the sixth day elapses without the occurrence of black vomit or suppression of urine, there is great hope of recovery. Death usually occurs from exhaustion.

The special poison of yellow fever appears particularly to affect the liver; and Professor A. Clark, of New York, has suggested that the change so constantly observed in this organ in fatal cases is an acute fatty degeneration. Dr. La Roche confirms this opinion; for he says that in all the examinations made during the epidemic of 1853 at the Pennsylvania Hospital, this change in the liver was discovered.*

The indications for *treatment* are not very prominent. Hence it will be better to follow Dr. La Roche's advice, and treat the urgent symptoms as they present themselves; leaving the rest to the reparative powers of the system. Turpentine, by its action on the skin and kidneys, is thought useful by many observers: if tried, it should be administered in small doses— \mathfrak{m} xv to xx, frequently repeated, almost from the commencement of the attack.

4. ERUPTIVE FEVERS.

The Eruptive Fevers may be regarded as continued fevers, having an eruption superadded. They are, *Small-pox*, *Cowpox*, *Chickenpox*, *Measles*, and *Scarlet Fever*.

These diseases have this common character: they are accompanied by fever, which runs a defined course; they are attended by an eruption which runs through a regular series of changes; they for the most part affect every individual once, and once only, during life; and they arise from specific contagion. Of all the eruptive fevers, scarlatina is probably that which most frequently affects the system a second time.

The following table shows the period of incubation, together with the date of eruption and time of its disappearance in the three chief eruptive fevers:—

* Yellow Fever, considered in its Historical, Pathological, Etiological, and Therapeutical Relations, vol. i. p. 404. Philadelphia, 1855.

Disease.	Period of incubation.	Eruption appears.	Eruption fades.
Measles	10 to 14 days	On 4th day of fever	On 7th day of fever.
Scarlet fever }	4 to 6 days	On 2d day of fever	On 5th day of fever.
Small-pox }			
	12 days	On 3d day of fever	{ Scabs form on 9th or 10th day of fever, and fall off about the 14th.

It is doubtful whether a disease should be described which presents many of the characters of measles and scarlet fever conjoined; and which has been described as *rubeola sine catarrho*, or *scarlatina morbillosa*, or *hybrid measles or scarlet fever*. I think such a special description unnecessary, because we know that measles and scarlatina may exist in the body at the same time, and hence the affection will merely be a compound of the two. Moreover, measles may coexist with smallpox, or whooping-cough, or chickenpox, &c., as Mr. Marson has well shown.*

a. VARIOLA, OR SMALLPOX.—This affection may be defined as a fever commencing with lassitude, headache, vomiting, and pain in the back; succeeded on the third day by an eruption of pimples, which in the course of a week inflame and suppurate. In many instances it is accompanied by a similar affection of the mucous membrane of the nose and mouth; in some, by swelling and inflammation of the subjacent cellular tissue; and occasionally by affection of the nervous system. When the vomiting and pain of the back are violent, they generally are the precursors of a severe form of the disease.

The peculiar eruption of pimples or papulæ always begins to show itself on the third day of the fever; appearing in the following order—on the face, the neck and wrists, the trunk, and, lastly, on the lower extremities.

* *Medico-Chirurgical Transactions*, vol. xxx. p. 129. London, 1847.

The papulæ then gradually ripen into pustules; the supuration being complete by the ninth day, at which time the pustules break, and crusts or scabs form. In four or five days more these scabs are falling off.

Now the severity of the disease almost always bears a direct relation to the quantity of the eruption. When the pustules are few, they remain distinct, and separate from each other; when very numerous, they run together, coalesce, and lose their regularly circumscribed circular form. We thus have a division of smallpox into two varieties—*variola discreta*, and *variola confluenta*. The former is seldom attended with danger; the latter is never free from it. The eruption on the face may be of the confluent form, while it is scanty elsewhere; still the disease is of the confluent kind. Sometimes, the pustules are so numerous that they touch each other, but nevertheless do not coalesce; the disease has then been said to be of the *cohering* or *semiconfluent* form.

In *variola discreta*, the eruption, in the words of Willan, is papular. On the third day a small vesicle, with a central depression, appears on each papula, containing some thin transparent lymph; around this an inflamed areola forms. About the fifth day of the eruption, or the eighth of the disease, the vesicles lose their central depression, become turgid, and hemispheroidal. Suppuration has occurred, and the vesicles have become pustules containing yellowish matter. A peculiar disagreeable odor now begins to emanate from the patient, which once smelt cannot be forgotten; from it alone the disease may be diagnosed. About the eighth or ninth day a dark spot appears on the top of each pustule, the cuticle bursts, the matter oozes out, and the pustule dries into a scab. In about ten days more the crusts fall off, leaving a purplish red stain, which slowly fades; or where the pustule has gone so deep as to destroy a portion of the true skin, that permanent disfigurement—the so-called pitting or pock-mark—results.

Variola confluenta is usually ushered in by more violent fever than is the discrete variety. The eruption comes out earlier; the eyelids swell, so that by the fifth day the patient is often unable to see; the parotid glands become

affected; there is salivation also, and the limbs swell. The vesicles on the face run together into one bleb, containing a thin brownish ichor; the face is also pale and doughy. The vesicles on the trunk and extremities, though often not confluent, have no areola and are pale. On the breaking of the pustules, large black or brown scabs are formed, exhaling great fetor; pulse gets rapid; great debility sets in; and there is restlessness. The mucous membranes become involved; those of the nose, mouth, larynx, and trachea are the seat of an eruption; tongue and palate become covered with vesicles; throat is very sore; there is difficulty of swallowing; hoarseness; dyspnoea; cough; the glottis often becomes narrowed, and suffocation perhaps ensues. Delirium frequently occurs. When to the foregoing symptoms malignancy and putrescency are added, the disease becomes *malignant smallpox*.

But the greatest difference between the two forms of the disease is in the *secondary fever*; which, slightly marked in distinct smallpox, is intense and perilous in confluent. It sets in usually about the eleventh day of the disease, or the eighth of the eruption, and occasionally at once proves fatal, the system appearing to be overwhelmed by the virulence of the poison. During its course, various troublesome complications may arise, such as erysipelas, swelling of the glands in the groin and axilla, phlebitis, pneumonia, &c.

There is no contagion so powerful or so certain as that of smallpox. From the time of imbibing the variolous poison to the commencement of the symptoms, is called the latent period, or the stage of incubation; its duration is about twelve days, during which time little or no inconvenience is felt.

Treatment.—The less drugs are used in the management of smallpox, the better; since they will neither shorten the disease, nor exert any favorable influence upon the eruption.* In the early stages, the patient should be kept

* "It is a melancholy reflection, but too true, that for many hundred years the efforts of physicians were rather exerted to thwart nature, and to add to the malignancy of the disease, than

quiet in bed, in a well-ventilated room; his diet should consist of arrowroot, gruel, or weak beef-tea; he should be allowed plenty of lemonade, or barley water, or plain water; and when the skin is very hot, tepid sponging will prove very refreshing. Supposing that the bowels are confined, a few doses of some mild saline laxative (F. 142, 312, 319) may be administered; or if there be great irritability and nervousness, a dose of opium or henbane (F. 271, 274) at bedtime, will do good: or if the maturation of the pustules goes on tardily, good broths and stimulants—wine or ammonia—are indicated.

In treating the *secondary fever*, keep the bowels gently open by mild laxatives; administer sedatives, if needful, once or twice a day; and support the system by a nourishing but digestible diet, such as strong beef-tea, milk, the yolk of one or two eggs daily, &c. Sloughy and gangrenous sores demand the liberal administration of wine and brandy. When they occur on the back or nates, the patient should be placed on a water-bed, or on one of Hooper's large water-pillows. To relieve the intolerable itching, the pustules should be smeared with cold cream; or, with what is better, carron oil (F. 252). When the pustules have burst, some dry powder—as the oxide of zinc, or powdered starch—should be freely applied, to absorb the matter.

b. VACCINIA, OR COWPOX.—Since the discovery of vaccination by Jenner, towards the close of the eighteenth century, the fatality of smallpox has been very much

to aid her in her efforts. Blisters, heating alexipharmics, large bleedings, opiates, ointments, masks, and lotions to prevent pitting, were the great measures formerly pursued, not one of which can be recommended. What think you of a prince of the blood royal of England (John, the son of Edward the Second) being treated for smallpox by being put into a bed surrounded with red hangings, covered with red blankets and a red counterpane, gargling his throat with mulberry wine, and sucking the red juice of pomegranates? Yet this was the boasted prescription of John of Gaddesden, who took no small credit to himself for bringing his royal patient safely through the disease."—*Lectures on the Eruptive Fevers*, p. 78. By George Gregory, M. D. London, 1843.

diminished.* When vaccination has been successfully performed on a healthy child, an elevation may be felt over the puncture on the second day, accompanied by slight redness; on the fifth, a distinct vesicle is formed, having an elevated edge and depressed centre; on the eighth, it is of a pearl color, and is distended with a clear lymph. It is composed of a number of cells, by the walls and floor of which the lymph is secreted. An inflamed ring or areola now begins to form round the base of the vesicle, and to increase during the two succeeding days; about the eleventh day it fades, and the vesicle, which has now burst and acquired a brown color, has by the end of the second week become converted into a hard, round scab. This falls off about the twenty-first day, leaving a circular depressed, striated cicatrix, which is permanent in after life. The constitutional disturbance which accompanies vaccination is usually very slight. Some interesting experiments lately made by Dr. Gustav Wertheim, of Vienna, tend to show that the frequency of the pulse is permanently increased by the process of vaccination. Thus, a man aged thirty-eight, and a woman aged thirty-three, neither of whom had suffered from smallpox, were vaccinated for the first time; the pulse, in both cases, increased in frequency up to the sixth day after vaccination, when it began to decline; never declining—not at least for the four months during which the observations were continued—as low as it was before the introduction of the vaccine virus. For example, before vaccination, the man's pulse was on an average 66; afterwards the average was 78.

* Not only has the mortality from smallpox been very much lessened, but the good looks of the people have been preserved by vaccination. "Unless the reader has scanned the long list of villanous portraits exhibited by the Hue and Cry in the old papers of the last portion of the seventeenth and first portion of the eighteenth centuries, he can form but a faint conception of the ravages committed by the smallpox upon the population. Every man seemed more or less to have been speckled with 'pockholes;' and the race must have presented one moving mass of pits and scars."—*Quarterly Review*, July, 1855. Article "Advertisements."

In practising vaccination, it is better to use recent lymph, which should be taken from vesicles between the fifth and ninth days, the eighth being probably the best. If preferred, the virus may be taken direct from the cow. Dairywomen are often infected from milking cows with the eruption of vaccinia on their teats. When smallpox occurs after vaccination, as it sometimes will, the disease is much milder and shorter, and is unaccompanied by secondary fever; it is called *modified smallpox*.

c. VARICELLA, OR CHICKENPOX.—This is a trifling complaint, almost peculiar to infants and young children; which completely runs through all its phases in six days. It consists of an eruption of transparent vesicles surrounded by a slight redness, commencing on the shoulders and breast, affecting the scalp, but often sparing the face; these vesicles form small scabs, which rapidly desiccate; there is no constitutional disturbance of the least importance; and the accompanying pyrexia is slight. Dr. Gregory says that when the eruption is abundant, the body presents the appearance of having been exposed to a momentary shower of boiling water; each drop of which has caused a small blister.

It occurs but once to the same person; it has a short incubation, probably of four days; it is contagious; and it requires no treatment.

d. RUBEOLA.—Rubeola (Willan), Morbilli (Sydenham), the Measles (Cullen), are terms employed synonymously to designate a disease, the distinguishing characters of which are a continued contagious fever, accompanied by an eruption, and frequently attended with inflammation of the mucous membrane of the respiratory organs.

The *symptoms* are lassitude, shivering, pyrexia, and catarrh; the conjunctivæ, Schneiderian membrane, and mucous membrane of the fauces, larynx, trachea, and bronchi are much affected. There is also swelling of the eyelids; eyes suffused and watery, and intolerant of light; sneezing; dry cough, with hoarseness and severe dyspnoea; drowsiness; great heat of skin; frequent and hard pulse. The period of incubation—or, in other words, the time which elapses between the period of infection and the

appearance of eruption—is from ten to fifteen days. Dr. Watson has known several instances in which it was exactly a fortnight. The eruption comes out on the fourth day of the disease, seldom earlier, often later; it consists of small circular dots, like flea-bites, which gradually coalesce into small blotches of a raspberry color; they present often a horseshoe shape, and are slightly raised above the surface of the skin. The rash appears first on the forehead and face, and gradually extends downwards; it begins to fade on the seventh day in the same order, and is succeeded by slight desquamation of the cuticle, and great itching.

It is worthy of notice that the fever does not abate on the appearance of the eruption, as in smallpox; nor does the severity of the attack at all depend upon the quantity of the rash. The contagion of measles is strong, but less powerful than that of variola. It is mostly seen in children.

The *prognosis* must depend upon the mildness or severity of the chest symptoms; the complications most to be feared are croup, bronchitis, and pneumonia. The diarrhoea, which often sets in as the rash declines, is for the most part beneficial.

Treatment.—Exposure to cold to be carefully avoided. The patient should be confined to bed, in an apartment moderately warm. Low diet, mucilaginous drinks, gentle aperients, and mild diaphoretics may be had recourse to. A draught, containing one drachm of the liquor ammoniæ acetatis, ten or twenty drops of the spiritus ætheris nitrici, and half an ounce of camphor mixture, may be given to a child six years old, every four or six hours.

The state of the three great cavities must be carefully watched, especially towards the decline of the eruption. Should any complications arise, they must be treated according to the rules which will be laid down in speaking of each affection. After the disease has subsided, the patient should be warmly clad, and not allowed to go out of doors too early.

c. SCARLATINA, OR SCARLET FEVER.—This well known disease is a contagious febrile affection, characterized by

scarlet efflorescence of the skin, and of the mucous membrane of the fauces and tonsils; the efflorescence commencing about the second day of the fever, and declining about the fifth; and being often accompanied by inflammation of the throat, and sometimes of the submaxillary glands. Like measles, it is essentially a disease of childhood; but it is more to be dreaded.

There are three varieties of this disease. *Scarlatina simplex*, in which the skin only is affected; *scarlatina anginosa*, in which both skin and throat are implicated; and *scarlatina maligna*, in which all the force of the disease seems to be expended upon the throat.

Scarlatina simplex commences with slight fever, lassitude, and headache. The eruption appears on the second day; first about the neck, face, and chest, in the form of numberless red points, which in twenty-four hours from their first appearance cover the whole body. On the limbs, but especially about the fingers, there is a diffused, continued efflorescence; but on the trunk the rash is distributed in irregular patches. The eruption is of a bright scarlet color, most distinct about the loins and the flexures of the joints. The efflorescence commonly terminates by desquamation of the cuticle, which begins about the end of the fifth day on those parts where the rash first appeared. On the face and trunk the desquamation is in the form of scurf; while on the hands and feet large flakes of cuticle are detached, so that sometimes a glove or slipper of scarf-skin comes away at once.

At the same time that the efflorescence has been spreading on the surface of the body, the mucous membrane of the mouth, fauces, and nostrils, has also been affected. The tongue especially puts on an appearance characteristic of scarlatina. It is at first covered with a thick white fur, through which the red elongated papillæ project; but, as this fur clears away, it becomes clean and preternaturally red, and of a strawberry appearance. The affection of the mucous membrane of the mouth, &c., terminates by resolution; with the disappearance of the rash the febrile symptoms subside, and the disease terminates at the end of eight or nine days, leaving the patient very weak.

Scarlatina anginosa is ushered in with more violent symptoms than the preceding. There is headache, with some delirium, more pungent heat of the skin, and marked prostration. About the second day, there is stiffness of the neck, uneasiness in the throat, hoarseness, and pain on swallowing. The fauces, palate, uvula, and tonsils are red and swollen, and the inflamed surfaces are covered with an exudation of coagulable lymph. As this inflammation goes on, all the febrile symptoms increase, and the skin becomes very dry and hot. The efflorescence does not observe the same regularity as in the simple form; it does not appear so early, is delayed to the third or fourth day, comes out in scattered patches on the chest and arms, and shows a tendency to vanish the day after its appearance, and to reappear partially at uncertain times. With the fading of the eruption, about the fifth or sixth day, the fever and inflammation of the throat begin to abate, although the throat often remains sore for a week or ten days after the disappearance of the rash. Occasionally, this variety of scarlet fever assumes a more aggravated form, being accompanied with an acrid discharge from the nostrils and ears, deafness, and inflammation of the parotid and cervical glands, sometimes going on to suppuration.

During the progress of the disease, particular attention should be paid to the internal organs, since there is a great predisposition to inflammation of the serous and mucous membranes.

Scarlatina maligna, described by Cullen under the title of *Cynanche maligna*, differs but little in its symptoms, at first, from *scarlatina anginosa*. The fever, however, soon assumes a malignant or typhoid character, great cerebral disturbance being superadded to the affection of the fauces and skin. There is great irritability, restlessness, and delirium, the delirium being sometimes violent, but usually of the low, muttering kind. The tongue is dry and brown, tender and chapped; the lips, teeth, and gums are covered with sordes, and the breath is extremely fetid. The throat is not much swollen, but appears of a dusky red hue, while the velum, uvula, and tonsils are covered with dark incrustations, consisting of exudations of lymph; in some cases,

there is gangrenous inflammation of these parts, followed by sloughing. The cervical glands are often involved in the inflammation. The rash is exceedingly irregular as to the time of its appearance and duration, often coming out late, disappearing after a few hours, and being renewed several times during the progress of the disorder. It is at first of a pale hue, but soon becomes changed to a dark livid red; petechiæ also often appear upon the skin.

In many instances, this malignant form of scarlet fever terminates fatally on the third or fourth day. It is always a disease of such extreme danger that only patients with vigorous constitutions survive it; great hopes may be entertained, however, if the seventh day be passed.

Sequelæ.—Children who have suffered from scarlatina are very liable to have their health permanently affected, and to become afflicted with some of the many forms of scrofula, especially strumous ulcers, ophthalmia, scrofulous enlargements of the cervical glands, diseases of the scalp, &c. They also seem predisposed to suffer from acute rheumatism, and from rheumatic pericarditis. But the most frequent and most serious sequel is *anasarca*—serous infiltration of the subcutaneous areolar tissue—often accompanied by dropsy of the larger serous cavities; it occurs about the twenty-second day from the commencement of the fever. Now it is curious that this scarlatinal dropsy is more frequent after a mild than after a severe attack, owing, probably, to the want of caution which is often observed in such cases during the period of desquamation. The patient gets exposed to cold, and immediately the escape of the fever-poison through the pores of the skin is checked, and, as a consequence, is directed to the kidneys in larger quantities than they can bear, giving rise to *acute desquamative nephritis*. This renal affection has its origin from many causes (intemperance, cold, the cholera poison) besides the one we are considering; but however produced, its symptoms are the same. It commences usually with rigors or chilliness, followed by feverish reaction, headache, restlessness, pain and tenderness in the loins, and often vomiting. The dropsy is an early *symptom*; the face first becomes puffy, followed by general

swelling of the areolar tissue throughout the body, and by effusion of fluid into one or more of the serous cavities. At the same time, there is frequent desire to pass urine, which is scanty, of a dark smoky color, and, on being tested by heat and nitric acid, is found to be highly albuminous. Examined microscopically, it is seen to contain masses of coagulated fibrin, blood-corpuscles, epithelial casts and cells, and occasionally crystals of lithic acid. When the progress of the case is favorable, the earliest signs of improvement are the disappearance of the dropsy and an increase in the quantity of urine. It is not uncommon for a patient, during convalescence from acute desquamative nephritis, to pass from four to six pints of urine in the twenty-four hours, the natural quantity averaging only from a pint and a half to two pints.*

Treatment.—The treatment of scarlatina yet remains to be considered. The *simple form*, says Sydenham, is "fatal only through the officiousness of the doctor." It requires no treatment beyond confinement to the house, warm clothing, spare diet, and attention to the bowels. In *scarlatina anginosa* the treatment is often much the same as that for many cases of continued fever. Cold or tepid sponging where there is great heat; emetics of ipecacuanha when the tongue is much coated, and nausea and irritability of stomach exist; shaving the scalp and the application of cold lotions, where there is much delirium, and the cautious administration of aperients when the bowels are confined. Saline medicines are grateful and cooling; or, where the pulse is feeble, effervescing draughts, containing an excess of ammonia, may be beneficially ordered (F. 329).

In *malignant scarlet fever*, a stimulating plan of treatment, such as that recommended in typhus, alone offers any chance of success. The vital powers are so prostrated by the deadly force of the poison, that unless we support them by the free administration of brandy, wine, and bark,

* For the more full consideration of this renal affection, as well as for its treatment, &c., the reader must consult Section VIII.

they will fail altogether. When seen early, however, the treatment may often be advantageously commenced by a mild emetic (F. 218 or 221). The gangrenous ulceration of the fauces, which often complicates this form, will be also best combated by the use of stimulants, and particularly by the free local application of the nitrate of silver. The chlorate of potass drink (F. 323) will be useful. Chlorine itself is used by some practitioners, who speak highly of its good effects, in even the worst cases (F. 74).

Belladonna, in very minute doses, has been recommended as a prophylactic against scarlatina. In an epidemic of this disease which occurred on board her Majesty's ships *Agamemnon* and *Odin*, in 1853, this remedy was freely tried without the slightest benefit. It has also now been used by many practitioners, and found useless.

SECTION III.

DISEASES OF THE NERVOUS SYSTEM.

1. INFLAMMATION OF THE BRAIN.

OUR knowledge of the effects of inflammation of the parts within the cranium is not sufficiently perfect to enable us to point out with certainty the symptoms which indicate inflammation of the substance of the brain, phrenitis, as distinguished from that of the membranes, meningitis; and fortunately the distinction is not of much practical importance, since it is doubtful whether meningitis and phrenitis ever occur as separate diseases.

Inflammation of the brain is of two kinds, acute and chronic.

1. ACUTE INFLAMMATION OF THE BRAIN.—The *symptoms* of encephalitis, or acute inflammation of the brain and its membranes, are, fever, nausea and vomiting, acute headache, impatience of light and sound, watchfulness, a look of oppression, suffusion of the eyes, and maniacal delirium. At the end of from twelve hours to two days, the second stage of the complaint sets in—the period of collapse. The patient falls into a state of stupor; his articulation is difficult or indistinct; his vision and hearing become dull; the pupil, from having been contracted to a pin's point, becomes dilated; there may be squinting and paralysis of the muscles of the eyelids; there are frequent twitchings of the muscles; the countenance is ghastly; the body is covered with cold sweats; the sphincters relax; and there is profound coma, often quickly ending in death. Occasionally the first symptom that attracts attention is a sudden attack of convulsion, in some cases occurring without any previous illness, sometimes preceded for a few days by headache and slight complaints, which have passed on

unnoticed. The convulsion is generally long and severe; it may be followed immediately by coma, which in a few days is fatal, or it may recur frequently at short intervals, and pass into coma at the end of twenty-four hours. Dr. Watson thinks that when nausea and vomiting are the earliest symptoms, the inflammation has had its origin in the cerebral pulp—in the substance of the brain, and that when the attack commences with a convulsion, the inflammation has commenced in the pia mater or the arachnoid.

In all the forms of this dangerous complaint there is great variety in the symptoms, and much observation is necessary to put us on our guard against the insidious characters which many of the cases assume, and the deceitful appearances of amendment which often take place. Fortunately the disease is of rare occurrence. It may terminate fatally in a few hours, or the patient may struggle on for two or three weeks.

Causes.—These are often difficult to detect. Inflammatory affections of the brain sometimes arise without any appreciable cause; occasionally they come on in the course of continued fever, or of measles, or of scarlatina, or they may follow upon injuries, or they may be due to disease of the bones of the ear or of the nose, or to poisoned blood, or they may be owing to suppressed evacuations. Dr. Abercrombie states that “one of the most common examples of this is suppression of the menses, which in young women of unsound constitution is very often followed by dangerous affections of the brain. Headache, or any symptom in the head occurring under such circumstances is always to be considered as requiring most minute attention.”*

The *diagnosis* of phrenitis from the delirium of fever and from delirium tremens is sometimes difficult. The history will often throw light on the matter. In phrenitis the delirium is an early symptom, and it is usually violent; the pulse is sharp, hard, and often irregular; and there is generally sickness. In fever, the delirium is an after symp-

* On Diseases of the Brain and Spinal Cord, p. 148, 4th edit., Edinburgh, 1845.

tom. In delirium tremens—the busy delirium, the soft and compressible pulse, the loquacity of the patient, the trembling of the hands, and generally the ease with which he is temporarily roused to answer questions rationally, are important diagnostic signs. Moreover, as Dr. Bence Jones has shown, in acute inflammation of the brain there is an increase in the earthy and alkaline phosphates of the urine; while in delirium tremens there is a marked diminution of them.

The *post-mortem appearances* most commonly found are, great vascularity; serous effusions beneath the pia mater and into the ventricles; the deposition of false membranes between the bone and dura mater, or the dura mater and arachnoid; thickening of the membranes, and ramollissement, or softening of the cerebral substance.

Treatment.—The principal measures usually recommended are, strict observance of the antiphlogistic regimen; that is to say, general and local bleeding, antimonials, in some states of the disease, digitalis, active purgatives, mercury, blisters to the back of the head and neck, and the constant application of cold to the head. With regard to venesection it is advised that the blood be allowed to flow until a decided impression is made upon the pulse, or until the patient faints.

When it is remembered that encephalitis is one of the most fatal diseases that can affect the human body, it can readily be imagined, from what has been already stated, that its dangers are not lessened by such treatment. And this seems really to be the case; for Dr. Abercrombie, in speaking of the results of such a course of remedies, says: “The cases which thus terminate favorably form, it must be confessed, but a small proportion of those which come under the view of a physician of considerable practice; but they hold out every encouragement to persevere in the treatment of a class of diseases which, after a certain period of their progress, we are too apt to consider as hopeless.” With the greatest respect for this excellent physician’s opinions, it still seems to me that the extensive failure of one plan of treatment should merely lead us to *try another*; and more especially, perhaps, to see if nature

unaided, or only gently guided, will not carry the patient through a disease where the efforts of Art are notoriously so futile. Be this as it may, let us determine not to thwart Nature, as we may easily do by taking away "the life of the flesh," or by poisoning it with antimony, and such like agents. Let us rather be content to watch the symptoms, to calm excitement by sedatives, to lessen increased heat of body by diluents and tepid sponging, to prevent accumulations in the intestines by purgatives, and to diminish maniacal delirium by the application of cold to the head.

Active cathartics of calomel and jalap, followed in three or four hours by an aperient draught, are often indispensable (F. 132). They should be repeated every morning, or every alternate day. Croton oil is a most valuable purgative in some of these cases (F. 152). Dr. Abercrombie says: "Although bloodletting is never to be neglected in the earlier stages of the disease, my own experience is, that more recoveries from head affections of the most alarming aspect take place under the use of very strong purging than under any other mode of treatment."*

The application of cold to the head, after it has been shaved, is a remedy of importance. Pounded ice in a bladder, or a cold evaporating lotion (F. 255), or especially the pouring of cold water in a stream upon the vertex of the head, will best effect our object. By the latter proceeding, a strong man, in the highest state of maniacal delirium, may often be subdued in almost a few minutes.

When, from exhaustion of the nervous force, an extreme degree of collapse occurs, the only chance of rescuing the patient will consist in the administration of stimulants, such as ammonia, sulphuric ether, strong beef-tea, wine, &c. In all stages of the disease the practitioner must watch his patient almost hour by hour, must be careful that he is kept dry and clean, and that the bladder does not become distended.

Should the disorder happily yield to these measures, great care will be requisite for some time, especially with

* Opus cit., p. 153.

regard to diet and the avoidance of all excitement, to prevent a relapse.

2. CHRONIC INFLAMMATION OF THE BRAIN.—This disease occasions symptoms which are singularly diversified; low spirits, slight headache, loss of appetite, constipation, and irregularity of the pulse, being perhaps the most prominent. As the disease slowly progresses, however, the evidences of cerebral disorder become developed, the memory fails, the external senses become impaired, and the general health is deteriorated. It often terminates in—

Ramollissement, or softening of the brain, which is usually partial, the softened parts becoming pulpy, and ultimately of the consistence of thin cream. It may sometimes be diagnosed by the occurrence of paralysis, with spasm, or by the permanent contraction of the flexor muscles of one or both extremities. When resulting from inflammation, the corpus callosum, septum lucidum, fornix, and the cerebral substance surrounding the ventricles are the parts which usually suffer. In such instances, too, the softened matter is often infiltrated with pus; occasionally the purulent matter is contained in a well-defined cavity, forming *abscess of the brain*. Softening may also occur in aged persons, from an opposite condition to the inflammatory—from an insufficient supply of blood, owing to disease of the cerebral arteries; the gray matter of the convolutions at the base of the brain, the optic thalami, and corpora striata are the parts then affected. Dr. Kirkes has also well shown that the detachment of fibrinous deposits from the valves, or interior of the left side of the heart, and their circulation with the systemic blood until they become arrested in one of the cerebral arteries may, by impeding the transit of a due quantity of blood, lead to imperfect nutrition, and hence to softening.*

Induration—is another termination of chronic inflammation. The indurated portion is generally of small extent, presenting the appearance of wax, or of boiled white of egg; the change is due to a great increase of albumen.

* *Medico-Chirurgical Transactions*, vol. xxxv. p. 281. London, 1852.

Tumors—both simple and malignant, *deposits of tubercle*, and *hydatids*, have also been found in the brain. Dr. Jenner has lately discovered *sarcinæ ventriculi* in the fluid removed from the ventricles of a child who died of acute tuberculosis.

2. ACUTE HYDROCEPHALUS.

Acute inflammation of the brain is a very common disease of early life—of children under five years of age. It rarely occurs, however, in children previously healthy; when it does so, it may be regarded as simple phrenitis, or encephalitis. When it is the result—as it frequently is—of tubercular deposit in the brain or its membranes, when it occurs, in fact, in scrofulous children, it is then known as acute hydrocephalus; a term evidently badly chosen, since it refers only to one of the results of the disease, not to the disease itself.

Symptoms.—The symptoms of acute hydrocephalus are various and uncertain. For convenience, they may be arbitrarily considered as exhibiting three stages. The *first*, or *premonitory stage*, is attended with indications of cerebral congestion, together with general fever, presenting exacerbations and remissions at irregular periods. The skin is hot; the appetite capricious—sometimes bad, sometimes voracious; the tongue is furred; the breath offensive; there is often nausea and vomiting; and the bowels are disordered—generally constipated. The child is drowsy, yet restless; it sleeps badly, moans or grinds its teeth, screams and awakes suddenly in alarm without any apparent cause.

At the end of four or five days, the disease, if unchecked, passes into the *second stage*, when its nature becomes very apparent, and its cure almost hopeless. The child wishes to remain quiet in bed; its countenance is expressive of anxiety and suffering; its eyes are closed, and eyebrows knit; and it is annoyed by light and noise. If old enough to reply to questions, it complains of headache, weariness, and sleepiness; crying out frequently, "Oh, my head!" As this stage advances, the pulse, which has hitherto been

rapid, becomes diminished in frequency, often falling in a few hours from 120 to 80; the slightest exertion, however, accelerates it. Stupor and heaviness now come on; there is often squinting; the little patient lies on his back almost in a state of insensibility, perhaps picking, with tremulous fingers, his nose and lips; convulsions frequently occur, and sometimes paralysis; while, at the same time, the urine and feces are passed unconsciously.

The transition to the *third stage*, at the end of a week or two, is sometimes effected very gradually by the drowsiness passing into profound coma, from which it is impossible to rouse the child. In other instances the child becomes comatose quite suddenly, and immediately afterwards is attacked with convulsions, which often put an end to the painful scene. Occasionally, however, death does not occur until the lapse of several days.

Post-mortem Appearances.—Those usually found are, traces of inflammation of the membranes of the brain; especially effusion of serous fluid beneath the arachnoid, and in the meshes of the pia mater, as well as the presence of false membranes between the arachnoid and pia mater. The cerebral substance often contains scrofulous tubercles, while granular tubercular deposits may be seen scattered upon and between the membranes. But the characteristic morbid appearance consists of softening of the central parts of the brain, with effusion of thin watery serum into the ventricles.

Treatment.—The treatment of acute hydrocephalus has always been said to be beset with difficulties; inasmuch as, being an inflammatory affection, it was thought to demand remedies which the patients, strumous children, could not bear. Fortunately, the difficulty is abolished, if the observations already made are at all sound; and, in addition, I believe sincerely, from the cases I have seen, that the less we deplete in this disease the greater the chance of the ultimate recovery of our patient.

It is only fair to mention, however, that most authors agree that depletion is not to be had recourse to without great consideration; that if there is much doubt, the practitioner should first try the effect of a strong purgative;

and that if it be necessary to take blood, local bleeding, by leeches, will generally answer every purpose.

In almost all instances purgatives are very useful ; and I think that most good is derived from such as contain or consist of mercury. At the same time that they are employed, Dr. West advises the continued administration of calomel, in one or two-grain doses, twice or thrice daily. Green evacuations, resembling chopped spinach, follow its use ; salivation is very rarely produced in young children. The local employment of cold is likewise an important remedy. A rag wetted with cold water, or the evaporating lotion (F. 255), laid on the child's head and frequently renewed, will generally suffice.

When the child is teething, many practitioners resort, as a matter of course, to scarification of the gums ; forgetting that the irritation arises from the passage of the tooth through the bony canal of the jaw, rather than from pressure on the gum. Such practice is a piece of barbarous empiricism ; but when the gum is tender and swollen, then the use of the lancet gives great relief. Should the vital powers become much depressed, either from the course of the disease or from the use of the remedies, stimulants must be freely had recourse to. I have frequently given a child from six to twelve months old a teaspoonful of port wine and water equal parts, or port wine and beef-tea in the same proportions, every hour, or every second hour, with the greatest advantage. If physic be preferred, order some ammonia with Hoffmann's anodyne (F. 342).

3. CHRONIC HYDROCEPHALUS.

Chronic hydrocephalus, or dropsy of the brain, is met with in children at various ages, as the result of a great variety of circumstances. When congenital, as it often is, it is generally associated with malformation of the brain. It is sometimes the result, sometimes the precursor, of acute hydrocephalus. The head attains a very great size in this disease, the unossified sutures readily yielding to the pressure of the liquid. The fluid is usually contained in the lateral

ventricles, which are often expanded into one cavity ; occasionally it is collected in the sac of the arachnoid.

The bodily functions are frequently but little impaired, sometimes not at all, till a short time before death ; it is remarkable also how little the mental powers are affected in many cases. Although essentially an affection of childhood, yet cases are recorded in which it has affected adults ; the celebrated Dean Swift suffered from it. According to Dr. West, almost every case is fatal. Professor Gölis, of Vienna, affirms, on the contrary, that of the cases which began after birth, and which were seen and treated early by him, he saved the majority.

The plan of *treatment* advocated by Professor Gölis, after great experience, consists in the administration of calomel in quarter or half-grain doses, twice daily ; together with the inunction of one or two drachms of mild mercurial ointment into the shaven scalp once in twenty-four hours. At the same time the head is to be kept constantly covered with a flannel cap, to prevent all risk of the perspiration being checked. If no improvement be perceptible after a lapse of six or eight weeks, diuretics, as the acetate of potash, or squills, or both, are to be combined with the treatment, and an issue made in the neck or on each shoulder, to be kept open for months. When convalescence is once established, he thinks benefit is derived from small doses of quinine, a quarter of a grain three or four times daily.

Two remedies, *compression* of the head, and *puncturing* it, have been strongly advocated by some writers. Compression is best effected by bandaging, or by the application of strips of adhesive plaster applied over the whole of the cranium, so as to make equal pressure on every part. In cases where there are no symptoms of active cerebral disease, pressure will probably do good. Puncture is performed with a small trocar and canula at the coronal suture, about an inch and a half from the anterior fontanelle ; only a part of the fluid is to be taken at one time, and gentle pressure must be kept up both during its escape and afterwards. This operation is only to be had recourse to when other means have failed.

Dr. Watson mentions two hopeless cases successfully treated on a plan suggested by Dr. Gower.* Ten grains of crude mercury were rubbed down with a scruple of manna and five grains of *fresh* squills. This formed a dose which was taken every eight hours, for three or four weeks. It caused a profuse flow of urine, great debility, and emaciation; no ptyalism. When the symptoms of hydrocephalus had disappeared, the health was restored by steel.

4. APOPLEXY.

By the term apoplexy is meant sudden insensibility, the loss of sensation, thought, and voluntary motion, with a more or less severe disturbance of the functions of respiration and circulation. It is a state of coma occurring spontaneously and suddenly.

It is often a matter of difficulty to distinguish between apoplectic coma and that due to a narcotic poison, or to drunkenness. The distinction is most important as regards the treatment. The coma is profound in each instance, though arising from so different a cause; the history of the case, the general appearance and age, and the presence or absence of the odor of spirits in the breath, are the only points which help to solve the difficulty.

The state of coma may end in three ways. Either it may gradually pass off, leaving the patient well; or it may terminate in incomplete recovery, the mind being impaired, and some parts of the body paralyzed; or it may cease in death. On examining the brain, we find either no appearance whatever of disease, or extravasated blood, or effusion of serum into the ventricles or beneath the arachnoid. Dr. Abercrombie calls the first, that which is fatal without leaving any traces, *simple* apoplexy; the second, *sanguinous* apoplexy, or *cerebral hemorrhage*; the third, *serous* apoplexy. During life, we are unable to distinguish by the symptoms these three varieties.

Warnings.—This dreadful visitation is seldom expe-

* Principles and Practice of Physic, vol. i. p. 458, 3d ed. London, 1848.

rienced without some previous threatenings, which, properly interpreted, should put the patient on his guard. The following individuals may be said to be predisposed to apoplexy: Those whose ancestors suffered from it; men of a peculiar habit of body, with a large head, florid face, and short, thick neck; and individuals advanced in life, beyond fifty. A predisposition may also be engendered by disease of the kidneys, of the heart, or of the cerebral bloodvessels, by intemperance, and by the cessation of habitual discharges. Among the threatenings, the following are the most important: Headache; giddiness, particularly on stooping; a feeling of weight and fulness in the head; noises in the ears; transient deafness or transient blindness; double vision; occasionally epistaxis; numbness; loss of memory; great mental depression; incoherent talking; drowsiness; indistinctness of articulation, and partial paralysis, sometimes affecting a limb, sometimes the muscles of the face, sometimes the eyelids.

Modes of Seizure.—Dr. Abercrombie has shown that the apoplectic attack commences in three different ways. "In the first form of the attack, the patient falls down suddenly, deprived of sense and motion, and lies like a person in a deep sleep, his face generally flushed, his breathing stertorous, his pulse full and not frequent, sometimes below the natural standard. In some of these cases, convulsions occur; in others, rigidity and contraction of the muscles of the limbs, sometimes on one side only."

In the second form, the coma is not the first symptom, but rather a sudden attack of pain in the head; the patient becomes pale, sick, and faint, sometimes vomits, and frequently falls down in a state resembling syncope. Occasionally, he does not fall down, the sudden attack of pain being merely accompanied by slight and transient loss of memory. After a few hours, however, the headache continuing, he becomes heavy, oppressed, forgetful, and gradually sinks into perfect coma, from which recovery is rare. A large clot is usually found in the brain.

The third form of apoplectic seizure begins with a sudden attack of paralysis of one side of the body, with loss of speech, but no loss of consciousness. The paralysis

passes gradually into apoplexy; or, in some favorable cases, it slowly goes off, and the patient recovers.

Phenomena during the Fit.—The duration of the apoplectic fit varies from two or three hours to as many days. There is total unconsciousness; pulse at first generally small, becomes full and strong according as the system recovers from the shock; it is usually slower than natural, sometimes intermitting; respiration slow, embarrassed, often accompanied by stertor; frothy saliva about the mouth. In bad cases, the body is covered with a cold, clammy sweat; the face is pale; the eyes dull and glassy, with dilatation of the pupils; the teeth firmly clenched; power of deglutition lost, or much impeded; torpidity of the bowels, or, if they act, the motions are passed involuntarily; and either involuntary micturition, or, as most frequently happens, retention of urine until the bladder becomes distended—overflows, as it were—and causes the urine to be constantly dribbling away. When the patient recovers incompletely, paralysis remains. (See *Section on Paralysis*.)

Post-mortem Appearances.—It is only necessary to notice those found in cases of sanguineous apoplexy. The blood may be effused upon or between the membranes of the brain, into one of the ventricles, or into the cerebral substance itself. In the latter case, it is usually found in the corpora striata, the optic thalami, or that part of the hemispheres of the brain which is on a level with these bodies. Dr. Craigie arranges the parts which may be the seat of the hemorrhage in their order of frequency, thus: the corpus striatum; optic thalamus; hemispheres; pons Varolii; crura of the brain; medulla oblongata; and cerebellum.

Treatment.—This may be divided into that which is prophylactic, and that which is required when an attack has occurred.

Prophylaxis.—When a predisposition to apoplexy is suspected, the individual should avoid strong bodily exertion; venereal excitement; the stimulus and irritation of *drunkenness*; violent mental emotion; straining at stool; *long continued stooping*; tight neckcloths; too much in-

dulgence in sleep; and warm baths. He should observe a cool spare diet, free from alcoholic drinks; regular exercise; and must pay great attention to his bowels. Formulæ 133, 136, and 140 will often be useful. Washing the head daily with cold water, or establishing a drain near the head, by means of an issue or seton in the neck, will perhaps do good. When giddiness, headache, throbbing of the arteries of the head, and epistaxis are present, much benefit will result from active purging, and from blistering the nape of the neck.

When an attack has occurred.—Formerly the treatment of every attack of apoplexy was commenced by bleeding; and statistics prove that the more the blood was taken away the greater was the mortality.* This can easily be imagined, for we only see the patient when the mischief is done: rupture and extravasation of blood has taken place, and bleeding won't remove it. But, it is said, depletion will prevent further extravasation. I believe, with Mr. Copeman, that so far from its doing so, it promotes it, by inducing greater thinness of the blood, and by diminishing its power of coagulating. In proof of this it is only necessary to read the reports of not a few cases, where it is distinctly stated that the abstraction of blood was immediately followed by an aggravation of the symptoms and by

* "The universal remedy, as it is called, for apoplexy is blood-letting; at least so generally has it been employed that of 155 cases in which the treatment is specified, 129 were bled, and only 26 were not; of the 129 who were bled, 51 recovered and 78 died—the cures being 1 in 2½, the deaths 1 in 1½; of the 26 who were not bled, 18 were cured and 8 died, the proportion of cures being 1 in 1½, and of deaths, 1 in 3¼. But the mortality varies a good deal according to the particular method in which blood-letting was performed. In 2 cases the temporal artery was opened, both died. In 11 cases cupping only was employed; 6 were cured and 5 died. 14 were treated by leeching; 4 cured, 10 died. 17 were bled in the foot, a plan strongly recommended by M. Portal, of which 13 were cured and 4 died. 85 were bled generally and copiously, of which number 28 recovered and 57 died; that is to say, 2 in every 3 cases terminated fatally."—*A Collection of Cases of Apoplexy*, p. 6. By Edward Copeman. London, 1845.

paralysis. As regards my own practice, it may be mentioned that among the several cases which came under my care when house physician to King's College Hospital, I never saw one in which I considered bleeding necessary; and certainly the majority of the cases, at least, recovered. The rule to adopt is that laid down by Cullen—to *obviate the tendency to death*. If the tendency be towards death by coma; if the pulse be full, or hard, or thrilling; if the vessels of the neck are congested; and if the face be flushed and turgid, then bloodletting may be called for. If, on the contrary, the patient is dying from syncope, with a feeble or almost imperceptible pulse, and a cold clammy skin, then bleeding will only insure a speedily fatal termination. In either case, the patient should be removed into a cool, well-ventilated room; his head should be raised; all the tight parts of his dress loosened, especially his cravat and shirt-collar; and cold applied to the head by means of pounded ice in a bladder. If the practitioner think it proper to bleed, let him do so by opening a vein in the foot as recommended by Portal; or let him take only a very small quantity of blood from the nape of the neck by cupping.

Active purgatives do good in most cases. If the patient can swallow, a full dose of calomel and jalap followed by the common black draught may be given (F. 132). If the power of deglutition be lost, three or four drops of croton oil should be put on the back part of the tongue. Stimulating enemata (F. 185, 186) should also be thrown up the rectum. Blisters are often subsequently of use, applied over the scalp or to the neck. Some practitioners recommend emetics; unless the attack was clearly due to an overloaded stomach, I should avoid them.

5. CONCUSSION OF THE BRAIN.

Concussion of the brain is signalized by fainting, sickness, stupor, insensibility, or sudden death, succeeding immediately to some blow or some act of external violence. Although cases of this kind are usually regarded as surgical, yet their importance demands so imperatively that

every practitioner should be well acquainted with their symptoms, treatment, &c., that no apology is needed for the introduction of this section.

Symptoms.—These will vary according to the degree of concussion. When the shock has only been slight, the person soon recovers from the state of unconsciousness, and complains only of confusion of ideas, faintness, sickness, a desire to sleep, and ringing noises in his ears. In a more severe case, the insensibility continues longer; the patient lies as if in a deep slumber, his pupils are insensible to the stimulus of light, and his breathing is often scarcely perceptible. When—after a variable interval—partial recovery ensues, there is great confusion of thought, often an inability to articulate distinctly, frequently severe vomiting, and sometimes paralysis of one or other of the extremities. In the worst forms of concussion, the person is felled to the ground by the shock, whatever it may be, and dies upon the spot.

Diagnosis.—The following circumstances, according to Chelius, distinguish concussion from pressure upon the brain caused by extravasation of blood. In concussion which immediately follows external violence, the patient usually recovers himself in some degree. In extravasation he lies in an apoplectic state, with snoring, difficult breathing; hard, irregular, intermitting pulse; with pupils widely dilated; but no vomiting. In concussion, the body is cold; the breathing easy; the pulse regular and small; the countenance little changed. Extravasation and concussion may, it must be remembered, occur together. It is often difficult to distinguish between concussion and drunkenness. The history of the patient, his general appearance, and the smell of his breath, are the chief points to attend to.

Prognosis.—This must in all cases be guarded. In a severe form of concussion, the convalescence is always tedious; and it frequently leaves behind it permanent impairment of the memory, loss of smell or taste, and weakness of sight or even amaurosis.

Treatment.—In all cases the patient should be carefully watched. If, a few hours after recovery from the shock, the reaction seem to be intense, the head should be elevated,

and cold applied: two or three drops of croton oil may also be placed on the tongue. Generally speaking, however, the shock to the system is so great, that mild stimulants are necessary; and a little wine, or brandy and water, should be cautiously administered. At the same time, if the surface be cold, warmth must be applied by means of blankets, bottles of hot water, hot bricks, &c. In the after-treatment of these cases, a mild unstimulating diet, rest and quiet, with gentle purgatives, will alone be necessary.

6. COUP DE SOLEIL.

This complaint is allied to apoplexy. In its perfect form it is met with only in the tropics. Mr. Cotton, Surgeon of a regiment of Infantry, met with twelve cases when at Meerut. The men affected were of irregular habits; and for two or three days previous to the attack had been indulging freely in alcoholic drinks, and prowling about under exposure to an almost vertical sun. The seizure usually occurred towards evening, with *symptoms* of stupor and insensibility; loss of speech; burning of the skin; at first contraction and afterwards dilatation of the pupils; and great rapidity, hardness, and fulness of the pulse. In some of the cases tetanic convulsions occurred. They almost all sank rapidly, death usually ensuing within two or three hours from the commencement of the attack. The *treatment* pursued consisted of venesection, the application of cold to the head, and blisters; but as almost all the patients seem to have died, this plan can hardly be recommended for adoption in future.

7. DELIRIUM TREMENS.

Delirium tremens, or *delirium à potu*, or *delirium ebriositatis*, is a very common disease in this country. It requires some care in its diagnosis, since, if mistaken and treated for phrenitis, which it somewhat resembles, the result will most probably be the death of the patient.

Symptoms.—The disease, which consists essentially of *nervous irritation*, is characterized by sleeplessness; a busy

but not violent delirium; constant talking or muttering; a trembling of the hands; and a generally excited and eager manner. The skin is generally moist, from copious perspiration; the face is sometimes pale, sometimes flushed; the tongue is moist and covered with a white fur; and the pulse is frequent and soft. In severe cases there is a diminution in the quantity of phosphates contained in the urine; in phrenitis, on the contrary, the phosphates are increased. Dr. Watson well describes the delirium. He says: "If you question the patient about his disease, he answers quite to the purpose; describes, in an agitated manner, his feelings, puts out his tongue, and does whatever you bid him; but immediately afterwards he is wandering from the scene around him to some other that exists only in his imagination. Generally his thoughts appear to be distressful and anxious; he is giving orders that relate to his business to persons who are absent; or he is devising plans to escape from some imaginary enemy; he fancies that rats, mice, or reptiles, are running over his bed, or that strangers are in his room. He looks suspiciously behind the curtain, or under his pillow, and he is perpetually wanting to get out of bed; but he is readily induced to lie down again. It is very seldom that he meditates harm, either to himself or to others; there is rather a mixture of cowardice and dread with the delirium."

Causes.—It arises generally from the excessive use of ardent spirits, wine, or beer. The habitual use of opium, and excessive mental excitement will also cause it. Men are very much more subject to it than women.

Treatment.—The great point is to procure sleep. For this purpose opium must be given in full doses; either morphia, or solid opium, or Battley's liquor opii sedativus, or the common tincture (F. 273, 292, 293). At the same time stimulants are necessary, and, as a rule, that stimulant will be the most beneficial to which the patient has been accustomed. Thus, if he has generally besotted himself with beer, give him good porter freely; if brandy has been his drink, administer it now. The bowels are to be kept open; the diet is to be nourishing.

Occasionally it is necessary to restrain the patient's

movements by strapping him to his bed, or by putting on a strait waistcoat. This should never be done, however, if it can possibly be avoided, as it always increases the excitement and prevents sleep. It will invariably be much better to have an attendant at the bedside to quietly control him. The apartment occupied by the patient should be darkened, kept quiet, and well ventilated.

8. INSANITY.

1. GENERAL OBSERVATIONS.—Few subjects more deserve the careful study of the medical practitioner than the diseases which affect the intellectual functions, and few have been more neglected. "The care of the human mind," says Gaubius, "belongs to the physician—it is the most noble branch of our office."

Many *definitions* have been given of insanity, but the only one which will embrace all forms is—That it is a general term used to express the mental condition opposed to sanity; sanity being that state of mind which enables a man to discharge his duties to his God, his neighbor, and himself. This definition is open to many objections; and let doctors and lawyers vex themselves as they may, every definition will be so. For, as nothing can be more slightly defined than the line of demarcation between sanity and insanity; so if we make the definition too narrow it becomes meaningless; and if too wide the whole human race may be involved in it.

Mental diseases are most frequently accompanied with symptoms of a variety of bodily disorders. Even the Greek and Roman physicians were aware of this fact; yet in the present day it is often forgotten, and the disorder is allowed to pass on unnoticed, simply because it is not at first apparent. There are two morbid affections especially, however, which demand our attention. Of all the forms of insanity those which are complicated with general paralysis, or with epilepsy, are the most terrible.

Insanity with general paralysis was first pointed out by Esquirol as an incurable disease; paralytic lunatics *seldom living* more than from one to three years. At

whatever period the paralysis supervenes, its commencement is generally unmarked by any striking symptoms; it increases as the mental powers diminish. Its first indication is often an impediment in the movement of the lips and tongue; the articulation is muffled and imperfect. This increases, and is followed by tottering, uncertain, and vacillating movements in walking; the excretions escape involuntarily, either from want of attention, or from paralysis of the sphincters; and there is exaltation of the mind, with the formation of childish hopes and schemes. As the disease progresses, the patients become unable to articulate a single word; their weakness is such that they cannot walk or even stand; all traces of intelligence become abolished; they get motionless and insensible; and their torpid existence is reduced to a kind of slow death. With regard to its nature, Dr. Conolly says: "It seems to originate in a general affection of the brain, scarcely indicated after death by more than greater softness or greater firmness, general or partial, of the cerebral substance, and by ventricles full of serum, combined merely with other appearances common to all chronic cases of mental malady; and it leaves the practitioner, after longest reflection, ignorant of its primary nature, and helpless as to its cure."*

Insanity with epilepsy is also said by Esquirol to be incurable. The conduct of insane epileptics is often characterized by the most ferocious, murderous, or suicidal aberrations; it is frequently also most filthy and disgusting. Notwithstanding these unfavorable symptoms, however, residence in a well-ordered asylum will do much to induce a certain amount of mental tranquillity; whilst a good diet and daily exercise will contribute to the physical improvement. If early death do not result, the disease usually subsides into incurable dementia.

2. VARIETIES OF INSANITY.—Much diversity of opinion exists as to the best *classification* of mental diseases. As the most intelligible and simple, I shall adopt that proposed

* On the Treatment of the Insane without Mechanical Restraints. London, 1856.

by Pinel and Esquirol, who divided insanity into *mania*, *monomania*, *dementia*, and *idiocy*. It must be remembered, however, that the differences between these varieties are almost always indistinctly marked; that the descriptions laid down in the books are extraordinarily distinct compared with the medley of symptoms presented by real cases; and that the various forms frequently run into each other.

a. *Mania*.—Mania, or raving madness, may be said to be characterized by *general* delirium. The reasoning faculty, if not lost, is disturbed and confused; the ideas are abundant, erroneous, absurd, wandering—not under control. The manners are violent, excited, and mischievous.

Although mania rarely makes its incursion suddenly, still it is that form of insanity which most frequently does so. From its commencement the delirium is general, and the fury extreme. Then it is that maniacs often destroy themselves, either from not knowing what they do, or from despair, being conscious of their condition, or from accidentally injuring themselves. The difficulty of describing the symptoms of mania is extreme. "Where is the man," says Esquirol, "who would dare to flatter himself that he had observed and could describe all the symptoms of mania, even in a single case? The maniac is a Proteus, who, assuming all forms, escapes the observation of the most practised and watchful eye."

In general, maniacs soon become weak and emaciated. The mere physical exertion which they go through, sometimes shouting, howling, laughing, reciting, &c., for hours together; often restless, constantly and rapidly moving about, would quickly exhaust a strong man. Combined with this fatigue is a want of refreshing sleep, and not unfrequently an aversion to all food. Where recovery takes place it is preceded by sleep, a desire for food, and a gradual cessation of the agitation and delirium.

Puerperal mania is a peculiar affection, occurring to women almost immediately—or about the fourth or fifth day—after delivery. It commences usually with restlessness, insomnia, severe pain in the head, and a diminution in the secretion of milk; sometimes there is no fever, sometimes the skin is hot and dry, the pulse full and quick, and

the tongue thickly furred. In the few cases which I have seen there has been great debility, the patients having been prostrated by floodings during their labors, or by some other cause which has lowered their vital powers. The delirium is often violent, and there is great general irritability. In their *treatment* these puerperal cases require peculiar care. The indications are to rouse and support the powers of the patient, and to allay the irritability of brain and the nervous system. The first is to be accomplished by a cordial, stimulant, and nutritious diet; the *mistura spiritus vini gallici* of the London Pharmacopœia will often be very useful, given frequently in small quantities; good beef-tea and wine are also beneficial. The cerebral excitement is to be calmed, and sleep procured by sedatives; full doses of the *liquor opii sedativus*, or of *camphor* with *morphia*, or of *henbane* (F. 271, 273, 274, 291), often do great good. The patient must be controlled effectually, but mildly, by a good nurse accustomed to the management of these cases; and when the disease threatens to be of considerable duration, she should be separated from her family and friends.

β. *Monomania*.—Monomania, or partial insanity, is that form in which the understanding is partially deranged, or is under the influence of some particular delusion. The mind is vigorous, the ideas are few, erroneous, fixed, not under control. The manners are in accordance with the predominant idea or train of ideas. At one time the intellectual disorder is confined to a single object, or a limited number of objects. The patients seize upon a false principle, which they pursue logically, and from which they deduce legitimate consequences, which modify their acts and affections. Thus, a monomaniac will insist that his body is made of glass, and, being thoroughly impressed with this idea, will reason correctly that slight causes will injure it; he consequently walks with care, and avoids any rough handling. Aside from this partial delirium, he often thinks, reasons, and acts like other men. Another monomaniac will fancy himself suspected of some horrid crime, or will think he is possessed of a demon or evil spirit, or will believe himself to be a god, imagining that

he is in communication with heaven. Occasionally, under the idea that he is a divine instrument of vengeance, he commits murder. He will often be happy, full of joy, and communicative, unless attempts are made to control him, when he becomes wild and furious. Such individuals ask the most extraordinary favors, and make the most absurd demands.*

Sometimes the symptoms are so far obscure, that although the conduct of the patient, the expression of his countenance, and his demeanor suggest mental delusions, yet he manifests nothing of the sort in his conversation. The insanity may then frequently be detected by the written letters. Such a case occurred in my own practice:—I was sent for one morning to see a young gentleman whose manners were peculiar, but who spoke rationally. A few hours afterwards he wrote to me: “I find that after a physician has received his fee he must do whatsoever the patient wishes, unless he (the physician) can and does certify that to be peculiarly hurtful and detrimental. I require you to come prepared to lave my bowels completely, and apply the antiscorbutic oil; prepare the perineum for a blister, and put three ounces of castor oil in the bladder. I have got a preparation made to keep the blister open.” Again, Dr. Noble mentions the case of a youth, twenty-one years old, the son of a publican, who had become reserved, disdainful, and totally changed in disposition shortly before being seen. No perversion of ideas was apparent, excepting from his demeanor. Attempts to gain an ex-

* The following copy of a letter, presented by a monomaniac to Dr. Conolly, is a good example: “In the name of the Most High, Eternal, Almighty God of Heaven, Earth, and Space, I command you to procure me the following articles immediately: A Holy Bible with engravings, &c.; a Concordance; a Martyrology, with plates; some other religious books; a late Geographical Grammar, a modern Gazetteer, newspapers, magazines, almanacs, &c., of any kind or date; musical instruments and music; large plans, guides, maps, directories,” and many other works, concluding with, “wines, fruit, lozenges, tobacco, snuff, oysters, money—everything fitting to Almighty God. Answer this in *three days*, or you go to hell. P. S.—A portable desk and stationery, and a dressing-case.”

planation were quite vain ; still the intuitive good sense of those about him suggested that he was not in his right mind. An accident at length revealed the fact. The draft of a letter to the Queen Dowager was found, showing that he believed himself to be her son, and was indignant at being temporarily deprived of his birthright.*

That form of monomania which is characterized by fear, moroseness, and prolonged sadness, has been separately described by some authors as *lypemia* or *melancholia*. Such cases are painful to have charge of, the despondency is often so great. A lypemaniac is unwilling to move, or talk, or to take food ; he will often remain a whole day without change of posture, or without uttering a word. He dreads solitude ; sleeps but little ; sometimes tortures himself by the anticipation of future punishment, while at other times he is bent on committing suicide. Melancholics having a tendency to suicide will often resort to modes of destruction such as baffle all ordinary precautions. For example, they will set fire to their clothing, and while parts of the body are burning, appear neither to suffer pain nor fear, but rather to triumph in their martyrdom ; so also they will tear their night dresses, and by stuffing the shreds into their mouths endeavor to produce suffocation ; and lastly, when taking pills containing narcotics, they have been known to hoard successive doses, until they have accumulated a poisonous quantity.

Another variety of monomania has also been described as *moral insanity* ; in which there is perversion of the natural feelings, affections, temper, habits, and moral dispositions, without at first any remarkable disorder of the intellect. Eccentricity of conduct, an impulse to commit crime, a propensity to every species of mischief, especially to theft, are often the leading features.

γ. *Dementia*.—Dementia, or incoherence, is that condition in which weakness of the intellect, induced by accident or age, is the prominent feature. The mind is altogether weak ; the ideas are confused, obscure, vague, incoherent, unfixed, and the memory is impaired. The

* *Elements of Psychological Medicine*, 2d ed. London, 1855.

patients are ignorant of time, place, quantity, property, &c. They forget in a moment what they have just seen or heard. Their manners are undecided, childish, and silly; their conversation is incoherent, and they repeat words and entire sentences without attaching any precise meaning to them. They have neither partialities nor aversions; neither hatred nor tenderness. They see their best friends and relatives without pleasure, and they leave them without regret. Sometimes they are constantly but slowly moving about, as if seeking for something; on other occasions, they will pass days in the same place and almost in the same attitude. The ultimate tendency of mania and monomania is to pass into dementia. It is very rarely cured.

8. *Idiocy*.—This condition is characterized by partial or complete absence of the intellect, either congenital or occurring in early life. The mind is not developed; there are no ideas, or they are few. The manners are childish, with occasional transient gusts of passion. The countenance is vacant, and void of aught approaching to intelligence. The articulation and the gait are often imperfect.

3. CAUSES OF INSANITY.—They are often difficult to detect. It is no doubt frequently hereditary; or it may sometimes be traced to marriages among near relatives, "breeding in and in," as farmers say; or it may perhaps be due to syphilis in the system of the parents, or to drunkenness on their part. The more immediate causes may be injuries of the head; abuse of alcohol or narcotics, as tobacco and opium; sexual excesses, and particularly masturbation; very rarely, perhaps, continence; defective nutrition; long protracted watchings and loss of rest; fevers; the retrocession of erysipelas or gout in persons predisposed to insanity. Then there are certain moral causes, as blighted ambition, disappointment in love, perverted religion, immoderate grief, long-continued anxiety and distress, prolonged intellectual exertion, and pecuniary reverses. I think it is Dr. Noble who remarks, that the more advanced the civilization of any community, the more abundant are the diseases of the mind. Humboldt states that he looked in vain for cases of insanity among the *native Indians of America*. The age at which insanity

appears to be most common is between twenty and forty; in women perhaps between twenty and thirty, in men between thirty and forty.

4. **PROGNOSIS OF INSANITY.**—This is more favorable when an acute disorder of the whole system, or some cerebral malady attended with fever, has constituted the beginning of the mental aberration, than when the alienation of mind has slowly exhibited itself, perhaps almost imperceptibly at the onset, but advancing progressively to confirmed insanity. When physical violence sustained by the head is the cause, the prognosis is uncertain, inasmuch as very severe lesions of the encephalon may thus arise. When the mind has been overthrown by sudden and severe calamity, the prospects of recovery are great. When the mind breaks down after protracted cares, the case is bad; especially if the physical energies also become depressed. When insanity is complicated with general paralysis or with epilepsy, it is generally quite hopeless. Probably more cases of mania are cured than of any other form of insanity; the probability of restoration is very much greater in the earlier than in the advanced periods; according to Esquirol the most favorable age for recovery is between twenty and thirty, few being cured after fifty; most authors assert that insanity in women is more curable than in men; and lastly, when the mental disease is connected with some bodily disorder which admits of removal by the progress of age, or by medical treatment, the grounds for hope are much increased. To form a correct prognosis no link in the chain of circumstances must be overlooked. Dr. Noble well observes: "The causes, moral and physical, predisposing and exciting; the history of the invasion and progress; the actual state, and the reactions taking place under influences of every kind—must all be known and rightly appreciated, if an opinion is to be formed of the slightest value."

5. **PATHOLOGY OF INSANITY.**—The best and most distinct theory of the pathology of insanity with which I am acquainted is that put forward by Dr. Henry Monro,*

* *Remarks on Insanity, its Nature and Treatment.* London, 1851.

which I shall give in nearly the author's own words: 1. That it is an affection consequent on depressed vitality; which depression is wont to manifest itself with peculiar and specific force in the cerebral masses, owing to a congenital and frequently hereditary tendency in the brain thus to succumb when oppressed by any exciting cause. 2. That when the cerebral masses are suffering from this condition of depressed vitality, they lose that static equilibrium of the nervous energies which we call tone (and which is peculiarly indicative of healthy vigor), and they exhibit in their functions the two different degrees of deficient nervous action (coincidentally), namely, irritable excess of action, and partial paralysis; that, in consequence, the brain becomes an imperfect instrument for the manifestation of mind; and that (as the manifestations of the spiritual being are subject to the infirmities of its instrument) its operations are distorted either into irritable and diseased excess, or are more or less suspended altogether. 3. That these two degrees of deficient nervous energy do not fall alike upon all the seats of mental operations, but that the seats of the more elementary faculties (such as the conception of ideas, &c.) maintain generally only the first condition, namely, that of irritable excess, which is exhibited either by excessive rapidity of succession of ideas, or undue impression of single ideas; while the seats of the less elementary but higher faculties, such as reason and will, &c., generally succumb to this second degree, namely, partial suspension of action. 4. Corroborative of this we find want of vitality and nervous tone in those parts of the system of the insane connected with physical life, as the skin, mucous linings, and appendages. 5. And lastly, these facts are supported by the results of treatment, for that which will at the same time raise depressed vitality, and equalize disturbed nervous energy, is found to be most useful in the treatment of insanity, and this is exercise in the open air, as well as the due employment of other vital stimuli. Hence it is deduced that insanity is caused by loss of nervous tone, and loss of nervous tone by depressed vitality. Violent symptoms may be regarded as attempts *on the part of nature* to throw off morbid excess of nervous

energy; consequently the violence is not to be looked on wholly with fear, but rather with hope, as we know the more acute the symptoms are, the more hope there is of cure.

6. THE GENERAL TREATMENT OF INSANITY.—In examining a person supposed to be insane, the duty of a medical man resolves itself into two parts:* 1st, to determine whether the individual in question be of sound mind; and, 2d, to give an opinion concerning the treatment required, and especially concerning the necessity of restraint, its degree, and nature. As regards the medical treatment, it must of course depend upon the state of the patient; but it may be positively asserted that under no circumstances can an antiphlogistic course of remedies be borne.† Our object clearly must be to restore and maintain the bodily functions and to remove any disorders in other parts of the system, as skin diseases, &c., which may be connected or co-existent with the cerebral affection. We may persevere the more, when we remember that many lunatics have been cured by improving their general health, even after suffering for some years. In an ordinary case of insanity, I should especially take care that the patient had a nutritious diet, warm clothing, exercise in the open air, healthy evacuations from the bowels, and sound sleep at night. I would

* On the Indications of Insanity. By Dr. Conolly, London, 1830.

† This opinion, unfortunately, will not be acquiesced in by all physicians. One of the most recent writers on this subject draws the following conclusions from his experience: Insanity, in any form, is not of itself an indication for bloodletting; on the contrary, its existence is of itself a contra-indication; hence the person who is insane should, other things being equal, be bled less than one not insane: insanity may co-exist with plethora, a tendency to apoplexy or paralysis, and sometimes sthenic congestion or inflammation, which call for the abstraction of blood; therefore, venesection in mental disorders should not be absolutely abandoned, although the cases requiring it are very rare. As a general rule *topical* is preferable to *general* bleeding. Insanity following parturition, other things being equal, is to be treated by bleeding less frequently than that which has its origin in other causes.—*An Examination of the Practice of Bloodletting in Mental Disorders.* By Pliny Earle, M. D. New York, 1854.

try and prevent all bad habits, as onanism, &c. ; and I should often use the douche, shower, or simple warm bath, according to the ordinary principles of medicine. At the same time, no mechanical restraint is to be resorted to; and such cheerful occupation and mental amusement should be afforded, as the lunatic could beneficially enjoy.

From this it will be seen that stimulants, tonics, mild warm purgatives, and narcotics, especially opiates, must often prove invaluable remedies. The diet of the insane should undoubtedly, as a rule, be generous and of the most nourishing kind. Much credit is due to Drs. Sutherland, Monro, and Henry Stevens, for the improved scale of diet which they have lately been the means of introducing at St. Luke's Hospital. Where patients obstinately refuse their food, strong beef-tea, mixed with wine or beer, and gruel or flour, must be introduced into the stomach by means of the stomach-pump.

As regards the moral treatment, no rules can be of universal application. I will only say, therefore, that it should be regulated by the "law of love;" and that no harshness or means which induce fear should be tolerated. Indeed, if we have not yet learnt that the lunatic is only to be really controlled by kindness and firmness, rather than by coercion and stripes, all further improvement may be despaired of. It can very rarely, if ever, be at all advantageous to reason with a patient; though, at the same time, it is better to do so than to treat their observations and complaints with perfect contempt. Dr. Noble mentions the histories of three patients in an asylum, each of whom fancied himself the Holy Ghost. On their being brought together, one was cured of his delusion; as he reasoned that there could not be three Holy Ghosts. But I cannot suppose that Dr. Noble regards the discussion as the agent that effected the cure; if indeed a cure was effected, for it is not stated whether there were other delusions, or what was the ultimate result of the case.

In order to render restraint imperative, I believe a lunatic should be dangerous either to himself or to others; or *seclusion* should be necessary as part of the curative treatment. I am convinced, however, that many asylums

contain harmless lunatics, who would be much happier and in no degree injured by residence elsewhere ; but who, unfortunately, have relations and friends who will not be troubled with them. Moreover, although very much has been done within the last few years to improve the appearance and character of our asylums, yet much remains to be accomplished. They still retain, to an injurious degree, the look and nature of prisons; while the parsimonious way in which some are furnished, and the especially wretched appearance of many of the night-cells, are circumstances positively disgraceful.

9. CEPHALALGIA.

Cephalalgia, or headache, is of common occurrence as a prominent symptom in the progress of most acute, and of many chronic, diseases. Occasionally, however, it predominates so much over the other phenomena, that instead of being a symptom it really becomes a disease.

Three principal varieties of headache may be noticed. The first, or *plethoric headache*, is connected with fulness of blood; the cerebral vessels become congested; there is a sense of pulsation in the ears; and giddiness on stooping. Persons who live too freely, who rise late in the morning, &c., are liable to it; also, plethoric young women, with irregularity of the catamenia. The second, or *bilious headache*, may be temporary or constant. When temporary, it generally arises from some error of diet, some excess either in food or wine, and passes away as the cause ceases. The constant bilious headache occurs in persons of weak stomach, who are almost always suffering from indigestion. The stomach and duodenum are out of order, as is evidenced by the nausea which exists, though there is seldom any disposition to vomiting. The third, or *nervous headache*, is often due to debility and exhaustion. It sometimes assumes an intermittent form, and is then characterized by its tendency to recur every day or every second day, with the same degree of regularity as an ague fit. It is often indeed known as brow-ague. There seems *no reason to believe*, however, that it is due to malaria, but

rather to constitutional debility. It is sometimes caused in women by over-lactation.

Headaches, of whatever kind, occur more frequently in persons of adult life than in extreme youth or advanced age; dwellers in towns suffer more than residents in the country; females more than males; the nervous and delicate more than the robust; the middle and higher classes of society more than the lower; and lastly, says Dr. Wright, they "especially affect persons who neglect the many little attentions and cares that our civilized, and therefore in some measure artificial mode of life requires. I may especially instance regularity in diet, carefulness in adapting the clothing to the requirements of our variable climate, attention to the action of the bowels, and a sufficient amount of exercise, as essential objects of our care."*

The indications for *treatment* are, to relieve the congestion of the head and the dyspeptic symptoms, while at the same time attempts are made to give tone and strength to the system. Mild purgatives, such as the compound rhubarb pill and blue pill, or the alkaline decoction of aloes (F. 136, 137, 165); emetics; stimulants and tonics, especially the nitro-muriatic acid (F. 347, 348); cold lotions to the head (F. 255); dry cupping, or blisters to the nape of the neck; and change of air are the means to be relied upon.

10. DISEASES OF THE SPINAL CORD.

1. SPINAL MENINGITIS.—Inflammation of the membranes investing the spinal cord rarely exists without accompanying disease in the nervous matter composing the cord; and rarely, also, without inflammation of the brain or its membranes. The *symptoms* which have been described as indicating inflammation of the meninges of the cord, are acute pains extending along the spine and stretching into the limbs, aggravated by motion, and often simulating rheumatism; rigidity or tetanic contraction of the muscles of the neck and back, amounting sometimes to

* *Headaches, their Causes and their Cure*, p. 12. London, 1856.

opisthotonos; a sense of constriction of the neck, back, and abdomen; suffocating sensations; retention of urine; priapism; and obstinate constipation.

2. MYELITIS.—Myelitis, or inflammation of the substance of the spinal cord, is not marked by any very uniform symptoms; since they will be found to vary with the severity of the attack, its duration, and the portion of the cord affected.

Tracking the inflammation from above downwards, the following are the chief *symptoms*. When the *cranial* portion is affected, deep-seated headache, convulsive movements of the head and face, inarticulate speech, trismus, difficult deglutition, difficult spasmodic breathing, irregularity in heart's action and in pulse, with hemiplegia or other form of paralysis. As the fatal stage advances, there is great prostration, feeble pulse, increased dyspnoea, and involuntary escape of the excretions. When the inflammation affects the whole thickness of the cord above the origin of the phrenic nerves, life is at once extinguished by stopping the action of respiration. When the inflammation is in the *cervical* portion, difficulty of deglutition, impossibility of raising or supporting the head, acute pain in back of neck, great dyspnoea, a sense of pricking and formication in the arms and hands, and paralysis of the upper extremities, form the prominent signs. In inflammation of the *dorsal* portion, there is pain in the dorsal region, convulsive movements of the trunk, paralysis of the arms and lower extremities, short and laborious respiration, great palpitation, &c. When, as is most commonly the case, the *lumbar* portion is affected, the paralysis of the lower extremities is more marked; there is great pain in the abdomen, with a sensation as of a cord tied tightly round it; convulsions or paralysis; and paralysis of the bladder and sphincter ani, leading to retention followed by incontinence of urine, and involuntary stools.

The *treatment* proper in inflammation of the cord and its membranes is the same as that previously recommended in inflammation of the brain and its membranes. Great care must be taken to keep the patient dry and clean, as well as to empty the bladder frequently with the catheter;

remembering that incontinence of urine generally arises from the bladder being over-distended, the urine literally overflows. Bed-sores will be best prevented by placing the patient on a water-bed; or in the absence of this, by the use of the soft amadou plaster.

3. SPINAL HEMORRHAGE—or spinal apoplexy, as it is sometimes termed, is more rare than cerebral hemorrhage. It is characterized by acute and sudden pain in the back, corresponding with the seat of effusion; followed by convulsions and paralysis. Its diagnosis is difficult.

4. HYDRORACHIS.—This is a term applied to abnormal collections of fluid within the spinal column. It is generally congenital, and associated with *spina bifida*. In such cases, one or more tumors containing fluid are found over the cervical, dorsal, or lumbar vertebræ, generally the latter, which communicate with the medulla spinalis. The arches and spinous processes of the vertebræ are wanting in the situation of the tumors.

The *treatment* must consist in improving the general health. In some instances, pressure judiciously applied to the tumor may be serviceable; but as a rule, the less these cases are actively interfered with the better.

5. SPINAL IRRITATION.—The existence of spinal irritation as a distinct and idiopathic disease, has been denied by some writers. Dr. Todd, and subsequently Dr. F. W. Mackenzie have done much, however, to remove any doubts on this head. Women are much more predisposed to it than men.

The *symptoms* consist of pain about the thorax, mammæ, abdomen, or uterus; this pain having some remarkable connection with the spine, since, wherever it may be, it is increased on pressing certain of the spinous processes of the vertebræ, which are also themselves exceedingly tender. Moreover this tenderness is sometimes confined to one spot. sometimes diffused over a large portion of the spinal column; it is most common in the lumbar and sacral regions. The disease would seem to depend upon congestion of the spinal venous plexus, causing pressure upon, and consequent irritation of the origins of the nerves.

Local treatment often suffices to remove all the symptoms.

Counter-irritation by blisters, or sinapisms, or the application of cupping-glasses, may therefore be relied upon; occasionally the repeated application of the iodine paint (F. 197) effects a cure. Its return may, I believe, be best prevented, by the use for some weeks of a belladonna plaster.

11. PARALYSIS.

1. **GENERAL OBSERVATIONS.**—By paralysis, or palsy, is meant a total or partial loss of sensibility or motion, or of both, in one or more parts of the body. All paralytic affections may be divided into two classes: the first including those in which both motion and sensibility are affected; the second, those in which the one or the other only is lost or diminished. The former is called *perfect*, the latter *imperfect* paralysis. Imperfect paralysis is divided into *acinesia*, paralysis of motion; and *anæsthesia*, paralysis of sensibility. Again, the paralysis may be *general* or *partial*, as it affects the whole body or only a portion of it. Partial paralysis is divided into *hemiplegia* when it is limited to the lateral half, and *paraplegia* when it is confined to the inferior half of the body. The term *local paralysis* is used when only a small portion of the body is affected, as the face, a limb, a foot, &c.

Paralysis of the eye, or loss of sensibility of the retina to the rays of light, is called *amaurosis*; paralysis of the levator palpebræ superioris muscle, allowing the upper eyelid to fall over the eye, *ptosis palpebræ*; insensibility to the impression of sounds (deafness), *cophosis*; insensibility to odors (loss of smell), *anosmia*; loss of taste, *ageusia*.

There are also certain forms of paralysis arising from the use of metallic poisons, as *mercurial palsy*, and *saturnine* or *lead palsy*; and lastly, there is a peculiar affection known as *paralysis agitans*.

2. **GENERAL PARALYSIS.**—General paralysis, or complete loss of sensation and motion of the whole system, cannot take place without death immediately resulting; but this term is usually applied to palsy affecting the four extremi-

ties, whether any of the other parts of the body are implicated or not. It must not be confounded with the general paralysis of the insane. M. Defermon* has related a case in which the power of motion in every part of the body was lost, with the exception of the muscular apparatus of the tongue, and of the organs of deglutition and respiration; the sensibility was also wholly destroyed, except in a small patch on the right cheek, by tracing letters on which the patient's friends were enabled to communicate with him; the intellect was perfect. In most cases the loss of motion is more marked than that of sensibility; the intelligence also soon becomes affected.

3. HEMIPLEGIA.—This term is used to denote paralysis of one side, extending generally to both the upper and lower extremities. It is the most common form of palsy; the left suffers more frequently than the right side. When only one extremity suffers, it is generally the arm. Very rarely, the upper limb of one side and the lower of the opposite is affected, forming what is termed *transverse* or *crossed palsy*. Generally the paralysis extends to the side of the face, the angle of the mouth being drawn slightly upwards and to the sound side, clearly because the muscles on that side are no longer counteracted and balanced by the corresponding muscles on the paralyzed side. The tongue also is often affected; when protruded, its point is turned towards the palsied side, owing to the muscles which protrude this organ being powerless on that side and in full vigor on the other; so that the sound half of the tongue is pushed out further than the other half, and consequently it bends towards the affected side. The paralysis is always limited to one-half of the body, the median line being the boundary. In most cases there is anæsthesia. The mental faculties are sometimes uninjured, but more frequently are irreparably damaged. The memory especially becomes affected; at the same time there is a peculiar tendency to shed tears, and to be much affected by slight causes.

If recovery take place, the symptoms of amendment are first noticed in the leg. In hopeless cases, the limbs waste;

* *Bulletin des Sciences Médicales*, vol. xiii. p. 6.

their nutrition is diminished ; they become atrophied. It is of practical importance to remember that they are colder, and unable to resist the influence of cold or heat equally with the sound parts.

Hemiplegia is generally the result of organic lesions of the brain. When a sequel of apoplexy, the effused blood is not, as a rule, found on the side of the brain corresponding to the affected half of the body, but on the opposite. The decussation of the fibres of the anterior pyramids at the junction of the medulla oblongata and medulla spinalis, accounts probably for this phenomenon. This form of paralysis may also be due to some lesion of one-half of the spinal cord, just below the decussation of the pyramids. Hence the term hemiplegia may signify *cerebral* paralysis or *spinal* paralysis. So also the hemiplegia may be transient and caused by a fit of epilepsy ; or it may follow chorea ; or an imperfect form may occur in nervous women, hysterical hemiplegia ; or, lastly, there is peripheral hemiplegia, in which the disease creeps from periphery to centre. In all forms the paralysis of motion is the prominent symptom ; but sensation is generally impaired. To distinguish between cerebral and spinal paralysis is not always easy. According to Marshall Hall the condition of the irritability or contractility of the muscular fibre in the paralytic limbs will guide our diagnosis ; since, 1. In pure cerebral paralysis, that in which the influence of the cerebrum *alone* is removed, there is augmented irritability and reflex action. 2. In spinal paralysis, that in which the influence of the spinal marrow is *also* removed, there is diminished irritability and reflex action. The galvanic current is the test of the amount of irritability. Dr. Todd, however, denies the correctness of these views, and asserts that the contractility or irritability of the muscles of paralyzed limbs bears a direct relation to their nutrition ; that the excitability of the paralyzed muscles to galvanism varies with the condition of their nerves, more than with that of the muscles themselves ; that, in the majority of cases of cerebral palsy, the contractility or irritability of the paralyzed muscles is less than those of the sound side, simply *because their nutrition is impaired by want of exercise ; and*

lastly, that no diagnostic mark to distinguish between cerebral and spinal palsy can be based on any difference in the irritability of the paralyzed muscles, for the muscles in spinal paralysis exhibit the same states as those in cerebral paralysis.*

4. PARAPLEGIA.—Paraplegia, or paralysis of the inferior half of the body, most frequently commences slowly and insidiously, with weakness and numbness of the feet and legs, or with tingling, *formication*, of these parts, unattended by pain. By degrees the weakness increases, until there is complete loss of sensibility and motion in the lower extremities, with paralysis of the bladder and rectum; the patient is obliged to remain in the horizontal posture; sloughs form on the hips and sacrum; and these, by their irritation and exhausting discharges, accelerate death. If the urine be allowed to collect in the bladder in any quantity, it will become ropy, fetid, and alkaline; owing probably to the coats of the bladder becoming diseased and pouring forth unhealthy mucus, in consequence of the paralysis. Dr. Bence Jones has proved that the urine when secreted is healthy; but admixture with the diseased mucus contaminates it, decomposes its urea, and gives rise to the formation of carbonate of ammonia, rendering it alkaline.

Although voluntary motion is completely abolished in the lower limbs, involuntary movements and spasms of the muscles are not uncommon. Reflex movements can be excited much more frequently in paraplegia than in hemiplegia.

Paraplegia may arise from injury of the spinal cord or its membranes; from inflammation or other diseases of these parts; from tumors pressing upon the cord; as well as from affections of the bones and cartilages of the vertebral column. There seems reason to believe, also, that some cases may be merely functional, that is to say, that no organic change exists which we can recognize. Intemperance, cold, excessive venery, &c., seem to produce this form.

* Medico-Chirurgical Transactions, vol. xxx. p. 227. London, 1847.

5. LOCAL PARALYSIS.—Of the different varieties of local palsy, I shall only mention *paralysis of the face*, the effect of pressure or injury of the portio dura and fifth pair of nerves. As one-half only of the face is affected, the appearance is very striking, the features on the paralyzed side being blank, unmeaning, and void of all expression. It is generally free from danger, being but rarely connected with cerebral disease; exposure to cold is a frequent cause of it.

6. MERCURIAL PALSY.—Mercurial palsy, or mercurial tremor, as it is sometimes termed, consists of a kind of convulsive agitation of the voluntary muscles, which is increased when volition is brought to bear upon them. In advanced stages of the disease, articulation, mastication, and locomotion are performed with difficulty; while the use of the hands is almost entirely lost. The skin acquires a brown hue, and the teeth turn black. Workmen exposed to the fumes of mercury, such as gilders of buttons, glass platers, barometer-makers, &c., are very liable to it.

7. LEAD PALSY.—This affection usually follows or accompanies colica pictonum, though it may exist independently. The poison of lead appears to exert some peculiar noxious influence over the nerves of the forearm and hand; in consequence of which the extensor muscles of the hands and fingers become paralyzed, so that when the arms are stretched out the hands hang down by their own weight, or, as the patients say, the *wrists drop*. The inferior extremities are very rarely affected. The sufferers frequently experience attacks of lead colic. A characteristic symptom of the presence of lead in the system is the existence of a blue or purplish line—the sulphuret of lead—round the edges of the gums, just where they join the teeth; a very important aid to diagnosis, for the notice of which we are indebted to Dr. Burton. Plumbers, painters, color-grinders, type-founders, &c., are the usual sufferers from this affection.

8. PARALYSIS AGITANS.—This disease is characterized by a tremulous agitation—a continued shaking—usually commencing in the hands and arms, or in the head, and gradually extending over the whole body. Mr. Parkinson has well defined the disease thus: “Involuntary tremulous

motion, with lessened muscular power, in parts not in action, and even when supported, with a propensity to bend the trunk forward, and to pass from a walking to a running pace; the senses and intellects being uninjured." The disease progresses slowly, but when far advanced the agitation is often so violent as to prevent sleep; the patient cannot carry food to his mouth; deglutition and mastication are performed with difficulty; the body is bent forward, and the chin bent on the sternum; the urine and feces pass involuntarily; and coma with slight delirium closes the scene.

9. TREATMENT OF PARALYSIS.—As paralysis is only the effect of some morbid lesion in one or other of the nervous centres, our treatment must be directed to the pathological condition on which it depends.

In *hemiplegia*, even when seen early, it must not be forgotten that the mischief is done; and we cannot remedy it by taking away blood. Indeed, the patient will require all the power which he possesses to enable him to recover from the shock to his system; and hence depletion will only do harm. Benefit may, however, be very frequently reasonably expected from active cathartics, particularly such as jalap and scammony combined with calomel, or croton oil, or stimulating purgative enemata. Some authors recommend blisters to the scalp or to the nape of the neck, or the use of a seton. I should also try alterative doses of mercury, with iodide of potassium, &c. When the paralysis becomes chronic, stimulants, especially such as act on the paralyzed parts, must be had recourse to. Strychnia in small doses (the twentieth or thirtieth part of a grain thrice daily) may be cautiously tried, if we can reasonably hope that there is no disease of the brain. Or local stimulants may be employed; thus frictions with the hand or flesh-brush, and stimulating liniments of turpentine, ammonia, tincture of cantharides, croton oil, &c., have been used with occasional benefit. Electricity and galvanism have also been extensively employed, but when there is structural disorganization they undoubtedly do harm.

The same principles apply to the treatment of *paraplegia*, arising from disease of the cord or its meninges. In many

of these cases, however, a mercurial course does decided good; the bichloride of mercury therefore, or Plummer's pill, should be perseveringly exhibited even for several weeks. The iodide of potassium, with liquor potassæ and sarsaparilla (F. 24, 26, 27) will also be useful. Where the paralysis seems to depend upon serous effusion into the spinal cavity, Dr. Seymour recommends the tincture of cantharides in half-drachm doses. Embrocations may also be applied along the spine.

In *mercurial palsy* the patient must be withdrawn from the injurious atmosphere. Warm baths, good diet, sea-air, and iodide of potassium—for reasons to be presently mentioned—will generally effect a cure.

The treatment of *lead palsy* has been very much facilitated by the hypothesis promulgated by M. Melsens, that the effects of lead and mercury were caused by chemical combination with the tissues of the body, or by being present in intimate union with those tissues in some analogous manner. The therapeutical application of the theory necessarily was, as pointed out by Dr. J. R. Nicholson, that the action of the curative agent must be directed to the conversion of the poisonous metal into a compound having less affinity for those tissues, and therefore readily eliminated from the body; and it has been shown that iodide of potassium possesses the requisite conditions to become a curative agent in lead diseases, according to this theory.

Dr. Nicholson has published a very interesting case in which the lead, after the administration of the iodide of potassium, could be readily detected in the urine, notwithstanding it could not be found before the commencement of the treatment; but, though the colic had entirely ceased, the palsy persisted. Galvanism was then used in conjunction with the iodide of potassium, and the patient went to his work, about fifty days after the commencement of the treatment, without any trace of paralysis. From this case it is concluded: First, that the iodide of potassium acts as a curative agent in lead-poisoning, by converting the lead into a form which can again be readily taken up by the blood, and evacuated by one of the natural outlets. *Secondly, that the iodide acts more speedily in conjunction*

with galvanism, when employed for the relief of lead paralysis.*

In addition to the iodide of potassium—gr. v thrice daily—the patient may use warm baths, friction to the paralyzed limb, and exercise in the fresh air. To prevent this disease, Liebig recommends all workers in lead to drink daily sulphuric acid lemonade. This acts probably by converting the salt of lead, as it enters the system, into an insoluble sulphate.

As regards the cure of *paralysis agitans* I can say but little, since I know of no measures likely to do much good. I should, however, try the effects of pure air, nourishing diet, baths, ferruginous tonics, and occasional opiates.

12. EPILEPSY.

Epilepsy is a disease the leading symptoms of which are—sudden loss of consciousness and sensibility, with clonic spasm, usually followed by coma; the attack recurring at intervals.

Warnings.—There are sometimes, though not in the majority of cases, premonitory symptoms sufficient to warn the patient of an approaching seizure. These warnings differ both in duration and character; in some cases being too short to allow the sufferer to dismount from horseback, or to get away from the fire, or even to lie down; while in other instances, many minutes, or even hours, elapse between their occurrence and the attack. Dr. Gregory, of Edinburgh, was assured by an epileptic that when a fit was approaching, he fancied he saw a little old woman in a red cloak advance towards him, and strike him a blow on the head; on which he at once lost all recollection and fell down. Spectral illusions, headache, giddiness, dimness of vision, confusion of thought, and especially that peculiar sensation known as the *aura epileptica*, constitute the most frequent premonitory symptoms. The epileptic aura is differently compared by patients to a stream of cold water, or a current of cold or warm air, or the creeping of an insect; the sensation commencing at the extremity of a limb, and

* Lancet, 14th October, 1854.

gradually ascending along the skin towards the head; and when it stops the paroxysm taking place.

Symptoms.—The commencement of the seizure is generally characterized by the utterance of a loud piercing shriek or scream, immediately after which the individual falls to the ground senseless and violently convulsed. Hence the disease has been called by the vulgar the *falling sickness*, or more vaguely, *fits*. During the attack the convulsive movements continue violent; there is gnashing of the teeth, foaming at the mouth, the tongue is thrust forward and often severely bitten, the eyes are fixed and partly open, the breathing is laborious or almost suspended, the face flushed and turgid, and death, in fact, seems about to take place from suffocation; when, gradually, these alarming phenomena subside, and shortly afterwards cease, leaving the epileptic insensible, and apparently in a sound sleep, or state of coma, from which he recovers exhausted, but without any knowledge of what he has just gone through.

The average duration of the fit is about five or eight minutes; it may last for half an hour or more. It may also be very slight or very severe, constituting the *petit mal* and the *grand mal* of the French. The periods at which the seizures recur are variable. At first there is often an interval of two or three months, but as the disease progresses the intervals become shorter, until hardly a day passes without one or more paroxysms. In recent cases, especially, the fits often take place in the night, either on just going to sleep or on awaking. As may be imagined, various accidents are likely to occur from falls, &c., during the attack.

Causes.—The tendency to epilepsy is often hereditary. Malformations of the head are frequent predisposing causes. When an epileptic dies who has only labored under the disease for a short time, no appreciable lesion of any part of the nervous system can, as a rule, be discovered. If death occur during a paroxysm, the brain is often found more or less congested. In cases of long standing, disease of the cerebral bloodvessels, with softening or induration of the brain, may be found. Occasionally the bones of the skull are thickened or otherwise diseased.

Treatment.—This must have reference to the measures to be adopted during a fit, and those to be employed in the interval.

During the fit—the patient should be laid on a large bed, air freely admitted around him, his head raised, and his neckcloth, together with any tight parts of his dress, loosened. A piece of cork or soft wood should, if possible, be introduced between his teeth, to prevent injury to the tongue. Cold affusion to the head will sometimes be useful, especially if the countenance is turgid and congested. In cases preceded by the epileptic aura, the application of a ligature just above the part where the sensation is experienced, has been said to prevent the attack.

In the interval—we must endeavor to improve the patient's general health, and especially to give tone and firmness to the nervous system. Dr. C. B. Radcliffe, in his excellent *Comments on Convulsive Diseases*, has well shown that everything tending to depress the vital powers does harm. Mineral tonics, especially the salts of iron, zinc, and silver, are consequently to be employed (F. 330, 334, 336, 354, 362, 365, &c.). The cold shower bath may be especially recommended, if it can be well borne; otherwise the tepid sponging bath should be substituted. The diet must be simple but nutritious, avoiding intoxicating drinks, and the patient's habits must also be regulated by such rules as common sense will dictate—daily exercise, early hours, and attention to the alvine and urinary secretions being necessary, while mental excitement or exertion is, on the other hand, especially contra-indicated.

In some cases, those more particularly which are dependent upon the thickening of the cranial bones, iodide of potassium, or a gentle, long-continued course of mercury, does good. Foville had great faith in the oil of turpentine in half-drachm doses, repeated every six hours; care is required, however, lest strangury result from its use. The nitrate of silver long enjoyed great but undeserved reputation; its tendency to blacken the skin, moreover, is sufficient to interdict its employment. Again, the juice of the cotyledon umbilicus has been of late much vaunted; my own experience coincides with that of many practitioners

who have tried it and found it valueless. Dr. Marshall Hall recommends strychnia in *tonic* not *stimulant* doses (F. 356); while, following a suggestion of Dr. Todd's, I have used the vapor of chloroform, and believe that I have found the fits diminish both in severity and number from its employment. The truth probably is, however, as Esquirol shrewdly remarked, that epileptics improve for a time under every new plan of treatment.

These remarks will hardly be complete without a brief notice of Dr. Marshall Hall's views as to the efficacy of tracheotomy in some forms of epilepsy. Two or three cases have been recorded where this practice has been adopted; but I must confess that I have never yet seen an instance in which I could recommend it.*

13. HYSTERIA.

Dr. Copland defines hysteria as, "Nervous disorder often assuming the most varied forms, but commonly presenting a paroxysmal character; the attacks usually commencing with a flow of limpid urine, with uneasiness or irregular motions and rumbling noises in the left iliac region, or the sensation of a ball (*globus hystericus*) rising upwards to the throat, frequently attended by a feeling of suffocation, and sometimes with convulsions; chiefly affecting females from the period of puberty to the decline of life, and principally those possessing great susceptibility of the nervous system, and of mental emotion."†

* Dr. Marshall Hall says: "There are two cases of epilepsy in its direst forms, in which the propriety and efficacy of tracheotomy admit of no doubt; these are, first, *epilepsia laryngea*, with *spasmodic laryngismus*, threatening the extinction of mind; second, *epilepsia laryngea*, with *paralytic laryngismus*, threatening the extinction of life." "The diagnosis must be established by observing the state of the larynx, of the neck, of the face, and of the cerebrum. In the absence of laryngismus, the deep purple lividity and tumefaction, and the subsequent deep coma, &c., are equally absent, and tracheotomy of course *hors de propos*."

† Dictionary of Practical Medicine, Art. "Hysteria," vol. ii. London, 1844.

I shall consider this disease as it occurs in paroxysms, and as it mimics other affections.

Symptoms.—The symptoms which characterize the hysterical paroxysm or fit are convulsive movements of the trunk and limbs; violent beating of the breasts with the hands clenched, or tearing of the hair or of the garments; shrieks and screams; violent agitation; and the globus hystericus; the attack ending with tears, convulsive fits of crying or laughter, and sometimes with violent hiccup. Occasionally, the patient sinks to the ground insensible and exhausted; remains so for a short time; and then recovers, tired and crying. The fit is often followed by the expulsion of a quantity of limpid urine; occasionally this secretion is passed involuntarily during the paroxysm.

Diagnosis.—It differs from epilepsy, inasmuch as the fit is almost peculiar to women; it continues longer; there is seldom loss of consciousness, the patient being aware of all that is passing around her. The convulsive movements are of a different character, much less severe, not more marked on one side of the body than the other; the respirations are never suspended; the tongue is not bitten; and the attack is not followed by coma, as epilepsy is.

Hysteria simulates almost all diseases; perhaps the favorite maladies imitated are, suppression of urine, calculus of the bladder, inflammation of the peritoneum, pleurisy, consumption, laryngitis, stricture of the œsophagus, aphonia or loss of voice, paralysis, and disease of the spine or of one or more of the joints. A practised eye is seldom, however, deceived by such patients. There is a peculiar expression about hysterical women, impossible almost to define, yet readily recognized when once it has been studied; they answer questions in an unpleasant manner, often only in monosyllables; and their pains are always said to be most acute, and to be increased by pressure, or almost even by pretended pressure. The catamenia are generally irregular, and there is often profuse leucorrhœa.

Treatment.—During a fit the patient's dress should be loosened; she should be prevented from injuring herself; should be surrounded by cool air; smelling salts may be

applied to the nostrils; and if she can swallow, a draught containing a drachm of the compound tincture of valerian, or of the fetid spirit of ammonia, should be administered. If the paroxysm continues, the sudden and free application of cold water to the head and face will probably cut it short.

In the other forms of hysteria the general health must be attended to, the bowels kept freely open, the shower-bath daily used, and ferruginous tonics administered. In hysterical epilepsy with disordered uterine functions, Sir Charles Locock recommends the prolonged use of the bromide of potassium, in five or ten grain doses thrice daily. When the catamenia are unnatural, the treatment must have reference to the nature of the particular disorder; thus, if too abundant, astringents and the cold hip-bath, to which alum or bay-salt should be added, must be employed; if scanty they should be encouraged by aloetic purgatives, different preparations of iron, and the warm bath. The compound decoction of aloes and the compound iron mixture, half an ounce each, taken thrice daily, forms an excellent medicine in such cases. One or other of Formulæ 81, 82, 83, 85, 144, 362, 370, 371, &c., will also be often found very valuable.

The patient's diet should be regulated; hot rooms and evening parties proscribed; stays ought not to be worn; and, lastly, it is of the greatest importance that healthy mental occupation should be found. Indeed, without this, a cure is not to be expected.

14. CATALEPSY: ECSTASY.

These wonderful diseases are very rare, but they undoubtedly do happen occasionally. Nervous, hysterical women are most likely to suffer from them; they are not dangerous.

By a fit of *catalepsy* is implied a sudden loss of consciousness and volition, the patient remaining during the attack in the same position in which she happens to be at the commencement, or in which she may be placed during its continuance. The seizure may last only a few minutes,

or several hours, or even one or two days. On recovery, which is generally instantaneous, there is no recollection of what has occurred.

In what is termed *ecstasy* the state is different. The patient is insensible to all external impressions, but is absorbed in the contemplation of some imaginary object. The eyes are immovably fixed; but impassioned sentences, fervent prayers, psalms and hymns, are uttered or sung with great expression.

A similar plan of *treatment* to that recommended in hysteria must be relied upon.

15. CHOREA.

Chorea, or St. Vitus's dance, is characterized by incomplete subserviency of the muscles of voluntary motion to the will; giving rise to irregular, tremulous, and often ludicrous actions. It has been quaintly designated "insanity of the muscles."

Symptoms.—This disease occurs most frequently in young girls between the age of six and fifteen, and begins generally with twitchings of the muscles of the face. By degrees, all or almost all the voluntary muscles become affected; the child finds it impossible to keep quiet; there is a constant movement of the hands and arms, and even of the legs; one side of the body is generally more affected than the other; the features are most curiously twisted and contorted; the articulation is impeded; and these movements are always most severe when the child is watched. If you ask your patient to put out her tongue, she is unable to do so for some moments, but at last suddenly thrusts it out, and as suddenly withdraws it. If you tell her to walk, she advances in a jumping manner, by fits and starts, dragging her leg rather than lifting it, and alternately halting and hopping. She cannot even sit still; her shoulders writhe about, she picks her dress, and shuffles and scrapes the floor with her feet. During sleep these irregular actions usually cease. When the disease lasts long, the countenance assumes a vacant appearance bordering on fatuity, and some imbecility of mind becomes

manifest. The functions of the stomach and bowels are also frequently deranged; the appetite is irregular; the abdomen swollen and hard; and there is often constipation. These symptoms, however, all cease on the termination of the disease; which is scarcely ever fatal, or even dangerous, unless it merges into organic disease of the nervous centres, or into epilepsy.

Chorea may last from one week to several months; the average duration is probably five or six weeks. It is often complicated with hysteria; and it has been observed to happen in conjunction with, or on the termination of, rheumatic fever, and rheumatic inflammation of the heart. Although most common in girls, yet boys not unfrequently suffer from it.

The *treatment* consists in regulating the bowels, subduing irritation, and strengthening the system. For this purpose, the employment of cathartics of a stimulating nature is necessary, such as calomel and jalap, or, where worms are suspected, the oil of turpentine. A combination of tonic or antispasmodic medicines with purgatives, is often found to be serviceable. The two great remedies, however, are the cold shower, or douche bath, and steel. As regards the former, it should be employed every morning on the patient's rising; with respect to the latter, different preparations have been recommended. Perhaps the best is the carbonate of iron, given in doses varying from half a drachm to two drachms, mixed with treacle. The sulphate, or the ammonio-citrate, or the tincture of the sesquichloride of iron may, however, be used almost as advantageously. The diet must be nutritious, exercise in the fresh air freely allowed, and mental excitement guarded against.

The employment of gymnastic exercises has been strongly recommended. In a memoir submitted to the French Academy of Sciences, M. Blache states that he has treated by these exercises alone, or by these in combination with other measures, such as sulphur baths, 108 cases—84 girls and 24 boys. In 102, the cure was completed, on an average, in 39 days; in the remaining six, in 122 days.

16. TETANUS.

This term denotes a disease the principal feature of which is long-continued, painful contraction or spasm of a certain number of the voluntary muscles.

Symptoms.—The muscles of the jaws and throat are usually the first affected. The patient complains of a sensation of stiffness in the neck, which gradually increases, and extends to the root of the tongue, causing difficulty in swallowing. The temporal and masseter muscles become involved, and *trismus*, or *locked-jaw*, occurs. When the disease proceeds, the remaining muscles of the face, those of the trunk, and, lastly, those of the extremities become implicated. The spasm never entirely ceases, except in some cases during sleep; but it is aggravated every quarter of an hour or so, the increased cramp lasting for a few minutes, and then partially subsiding. When the strong muscles of the back are most affected, they bend the body into the shape of an arch, so that the patient rests upon his head and heels, a condition known as *opisthotonos*. When, on the contrary, the body is bent forwards by the strong contraction of the muscles of the neck and abdomen, the affection is termed *emprosthotonos*; while, if the muscles are affected laterally, so that the body is curved sideways, it has been designated *pleurosthotonos*, or *tetanus lateralis*.

The suffering caused by the tetanic spasms is absolutely frightful to contemplate; the face is pale, the brows contracted, the skin covering the forehead corrugated, the eyes fixed and prominent, sometimes suffused with tears, the nostrils dilated, the corners of the mouth drawn back, the teeth exposed, and the features fixed in a sort of grin—the *risus sardonicus*. The respirations are performed with difficulty and anguish; severe pain is felt at the sternum; there is great thirst, but the agony is increased by attempts at deglutition; the pulse is feeble and frequent; the skin is covered with perspiration; and yet, with all this suffering, the intellect remains clear and unaffected. Death at length ends the scene, being due partly to suffocation and partly to exhaustion.

There is a peculiar form of this affection called *trismus nascentium*, which occurs in young infants about the second week after birth, and which is common in the West Indies. It is very rare in this country.

The *causes* of tetanus are chiefly exposure to cold and damp, and bodily injuries. When due to cold, or when arising spontaneously, it is termed *idiopathic*; when the result of wounds, *traumatic* tetanus. The symptoms produced by a poisonous dose of strychnia are very similar to those of this disease. The most common *post-mortem appearances* are alterations in the spinal cord and its membranes.

The *treatment* is commonly empirical, and generally, it must be confessed, useless. I have never had the management of a case, but should it fall to my lot to treat one, there are three remedies on which I should chiefly rely—opium, chloroform, and wine. Laudanum, or a solution of morphia, should be given in large, frequently repeated doses; either remedy is generally well borne. The patient might also be kept under the influence of chloroform for very many hours; indeed, I would not mind trying its use for one or two entire days, provided no symptoms to forbid it arose during its operation. If deglutition be difficult, enemata must be used. I should also be inclined to try the application of a blister along the spine, dusting the raw surface afterwards with from two to four grains of the acetate or hydrochlorate of morphia. Dr. Todd has suggested the use of ice to the spine. Some practitioners recommend the frequent use of the warm bath, while others prefer the cold douche. The feelings of the patient might be consulted as to which he would prefer. Purgatives will generally be necessary. Bloodletting, mercury, digitalis, tobacco, musk, iron, hydrocyanic acid, belladonna, and the extract of Indian hemp, have been repeatedly tried, and as often caused disappointment.

17. HYDROPHOBIA.

Hydrophobia is a most fearful malady, not only on account of its almost universal fatality, but also because

of the great sufferings it gives rise to. The pathognomonic signs are cramps of the muscles of the pharynx and thorax, a great dread of fluids, difficulty in drinking, restlessness and anxiety, delirium, exhaustion, and death.

Symptoms.—A person, we will suppose, is bitten by a rabid animal. After an uncertain interval, varying from one month to eighteen*—the majority of cases present symptoms within thirty or forty days from the inoculation of the poison—called the period of *incubation*, a sense of chilliness, languor, and lassitude is experienced; there is restlessness also, and some headache. Sometimes there is a sensation of numbness or soreness in the bitten part; in any case, these symptoms are followed, in two or three days, by the *confirmed* stage of the disease, which commences generally with garrulity, peculiar sighings, and a horror of liquids; then succeeds a frequent sense of suffocation, an excessive secretion of saliva, and violent spasmodic convulsions of the whole body, occasioned especially by the sight of liquids, or the sound of running water, or any attempt at drinking. The spasmodic terror inspired by the sight of water has been well described by Dr. Marcet, who, in relating the history of a case of hydrophobia, says: "On our proposing to him to drink, he started up and recovered his breath by a deep, convulsive inspiration; yet he expressed much regret that he could not drink, as he conceived the water would give him great relief, his mouth being evidently parched and clammy. On being urged to try, however, he took up a cup of water in one hand and a teaspoon in the other. The thought of drinking out of the cup seemed to him intolerable; but he seemed determined to drink with the spoon. With an expression of terror, yet with great resolution, he filled the spoon, and proceeded to carry it to his lips, but before it reached his mouth his courage forsook him, and he was obliged to desist. He repeatedly renewed the attempt, but with no better success. His arm became rigid and im-

* Dr. Bardsley has recorded an instance in which twelve years is said to have intervened between the bite and the first hydrophobic symptoms.

movable whenever he tried to raise it towards his mouth, and he struggled in vain against this spasmodic resistance. At last, shutting his eyes, and with a kind of convulsive effort, he suddenly threw into his mouth a few drops of the fluid, which he actually swallowed. But at the same instant he jumped up from his chair, and flew to the end of the room, panting for breath, and in a state of indescribable terror."* In addition, the countenance is anxious; the forehead is perhaps covered with cold, clammy sweats; there is generally much mental distress, but the intellect still remains perfect. As the fatal issue quickly approaches, the sense of suffocation becomes more urgent; the convulsions more violent; the saliva more difficult to expel, though the attempts at spitting are incessant, and the terror greater, until at length wild delirium succeeds, followed by exhaustion and death.

The general duration of the disease is from two to three days. There seems reason to believe that only a small number of those bitten by rabid animals suffer from hydrophobia. John Hunter mentions an instance in which of twenty-one persons bitten, only one suffered. Moreover, it is possible that an attack of hydrophobia may go off after the premonitory symptoms have commenced. Dr. Elliotson relates—*Lancet*, May, 1829—the following instance: Two little girls were bitten in the face by the same dog, while they were standing at their father's door. She who was bitten the second became hydrophobic and died. The other, at exactly the same time, experienced precisely the same premonitory symptoms as her sister, heaviness and general indisposition, but they all went off.

Mr. Youatt has proved that hydrophobia has, occasionally, a favorable termination in the dog.

Treatment.—This must be prophylactic, for the cure of the disease seems in the present state of medical knowledge almost hopeless. The wounded part is to be excised as soon as possible after the bite; care being taken to remove every portion touched by the animal's teeth, and to obtain

* *Medico-Chirurgical Transactions*, vol. i. p. 138. London, 1809.

a clean raw surface. The wound is then to be thoroughly washed by a stream of water long poured over it; and lunar caustic afterwards applied. Mr. Youatt prefers the nitrate of silver freely used, to every other caustic; and he also recommends that after its application the wound should be quickly healed.

In treating the disease itself, I should resort to the inhalation of chloroform, the use of opium, prussic acid, and ice; though without much hope of success. Dr. Todd kept a patient under the influence of chloroform for about eight hours; but it did not seem to retard the fatal termination. So severe are the sufferings, however, that it is a great point to give even temporary relief. Dr. Marcet's patient said imploringly: "Oh, do something for me. I would suffer myself to be cut to pieces! I cannot raise the phlegm; it sticks to me like bird-lime." And after trying to recollect himself, he again exclaimed: "Gentlemen, don't ask me questions, I cannot say more, my feelings cannot be described!" Tracheotomy has been proposed, but it would be a useless piece of cruelty to resort to it. The practitioner should remember that inoculation with the saliva of a patient with hydrophobia seems by no means impossible; he should, consequently, carefully guard against this secretion coming in contact with any scratch or abraded surface.

18. NEURALGIA.

1. INTRODUCTION.—The pains which occur in the course of disease may be divided into two varieties: *i. e.*, into those occurring at the seat of mischief; as pain in the breast from cancer of the mamma, pain in a joint from inflammation of the synovial membrane, pain in the sciatic nerve from disease of the neurilemma; and those referred to parts not actually the seat of morbid action, as pain in the shoulder from disease of the liver, pain in the little finger from striking the ulnar nerve at the elbow, pain in the knee from disease of the hip, and pain in the foot from piles, stricture of the urethra, &c.

Neuralgia consists of violent pain in the trunk or branch

of a nerve, occurring in paroxysms, at regular or irregular intervals: frequently there are nocturnal exacerbations. It may attack the nerves of the head, trunk, or extremities; the subcutaneous nerves of these parts suffer the most frequently.

2. VARIETIES OF NEURALGIA.—When the branches of the fifth pair of nerves are the seat of the pain, we call the disease *neuralgia faciei* or *tic douloureux*; when certain nerves about the head, *hemicrania*; when the sciatic nerve, *sciatica*. Some authorities consider that *angina pectoris* is a neuralgic affection of some of the cardiac nerves; and *gastrodynia* a similar disease of the nerves of the stomach.

a. *Tic Douloureux*.—Tic douloureux, or facial neuralgia, may affect either of the three chief branches of the fifth pair of nerves. When the pain depends upon a morbid condition of the first or ophthalmic branch, the frontal ramification of it—the supra-orbital nerve—is the most frequently attacked; the suffering being referred chiefly to the forehead. When the second or superior maxillary branch is the seat of the complaint, the infra-orbital nerve is the one most commonly affected; the symptoms consisting of excruciating pain shooting over the cheek, lower eyelid, alæ of the nose, and upper lip. Tic douloureux of the third or inferior maxillary branch is generally confined to the inferior dental nerve, especially to that portion of it which emerges from the mental foramen and extends to the lower lip. The pain is referrible to the lower lip, the alveolar process, the teeth, chin, and side of the tongue.

Whichever nerve may suffer, the pain is usually confined to one-half of the face. The right infra-orbital nerve is the most frequent seat of this disease. The pain comes on usually very gradually, perhaps a momentary twinge; but soon it increases in severity, gets lancinating and burning, and often becomes excessive and intolerable. I have seen the most horrible sufferings induced; and until I became aware of the value of chloroform, have often been unable to afford any relief. Not unfrequently the attack is preceded by nausea and derangement of the digestive organs,

sometimes by dyspnœa, and occasionally by slight rigors followed by heat.

Facial neuralgia may arise from many circumstances, as from decayed teeth, though Sir B. Brodie denies this; from disease of the bones of the face; or from organic disease of the brain. Frequently the affection can only be regarded as a product of hysteria in an hysterical constitution; sometimes it is intermittent and periodical, and appears to be due to the poison of malaria; in many cases it seems to be dependent on disordered digestive organs; while in not a few it cannot be traced to its real source.

In a person liable to neuralgia, the paroxysms of suffering are induced by very trifling causes; a slight current of air, a sudden jar or shake, or anything which reminds the patient of his malady, will suffice to bring them on. The pains often prevent all attempts even at repose; when the sufferer is once asleep, however, the rest is sound and undisturbed; since the pains, as pointed out by Sir B. Brodie, are suspended by sleep.

β. *Hemicrania*—is merely headache, affecting one side of the brow and forehead. It is often attended with sickness, and frequently results from debility. Occasionally its attacks are periodical, coming on at a certain hour every day. It has been called *Sun-pain*, from the circumstance that at times it continues only as long as the sun is above the horizon.

γ. *Sciatica*—consists of acute pain following the course of the great sciatic nerve, and extending therefore from the sciatic notch down the posterior surface of the thigh to the popliteal space, and frequently along the nerves of the leg to the foot. It sometimes results from pressure upon some part of the nerve, sometimes from inflammation, and occasionally from rheumatism. Puerperal women, especially those of a rheumatic diathesis, not uncommonly suffer from sciatica, the nocturnal exacerbations of pain quite preventing sleep and exhausting the patient. Usually one limb only is affected.

3. TREATMENT OF NEURALGIA.—In the treatment of neuralgia, it is obvious that our first efforts must be directed to the removal of the cause. The state of the health

must be looked to ; general plethora, which very rarely exists in these cases, being relieved by purging and other lowering means, while constitutional debility is to be corrected by nourishing diet and ferruginous tonics. Dr. Elliotson says, that "in all cases of neuralgia, whether exquisite or not, unaccompanied by inflammation, or evident existing cause, iron is the best remedy;" the sesquioxide may be given in half-drachm or drachm doses two or three times a day, with an occasional aperient. When there are symptoms of disorder of the digestive organs, purgatives (especially F. 136) and antacids will often give relief. Cases associated with rheumatism will derive benefit from iodide of potassium, guaiacum, colchicum, and occasionally from turpentine, &c. ; while those in which the attacks are periodic will often be cured by large doses of quinine, or by minute doses of arsenic with bark. In most instances narcotics and sedatives will be necessary.

Certain topical expedients have been proposed. Division of the affected nerve is an unscientific operation, which can rarely, if ever, be of any service. Any tumor or foreign body pressing upon the nerve must be removed, or any portion of necrosed bone that may be the cause of the suffering must be taken away. In facial neuralgia, the extraction of a carious tooth will sometimes effect a cure; my friend Mr. Hulme tells me that he has known instances of this happy result. Belladonna, chloroform, opium, and aconite applied to the affected part will often at least palliate the suffering. A small portion of an ointment made by mixing one grain of aconitine with one drachm of lard, may be cautiously smeared over the track of the painful nerve once or twice a day. So also warm baths, or hot douches of medicated water will often be useful. But when the pain is on, and when the patient is racked with torture, no agent produces such instantaneous relief as chloroform; the inhalation of which should be permitted until complete insensibility is produced. The ease induced often continues long after the patient recovers from the immediate effects of this anæsthetic.

SECTION IV.

DISEASES OF THE ORGANS OF RESPIRATION AND CIRCULATION.

1. CATARRH.

CATARRH consists of inflammation of the mucous membrane of some part of the air-passages. It is called *coryza* if it affect the Schneiderian membrane of the nose; *gravedo*, if the frontal sinuses suffer; and *bronchitis*, when the stress of the disease falls on the trachea and bronchial tubes.

It is the commonest of diseases. It arises not from mere cold, but from too sudden a change of temperature, or from exposure to wet, &c. The symptoms chiefly consist of lassitude, pains in the limbs, aching of the back, a sense of tightness across the forehead, excessive discharge from the nostrils, profuse lachrymation, hoarseness, sore throat, furred tongue, more or less feverishness, thirst, loss of appetite, and a quick pulse. At the end of about forty-eight hours these symptoms begin to subside; or the disease passes into some more severe affection, as acute bronchitis, pneumonia, &c. No one applies to a doctor to cure a cold. Every man acts as his own physician, and judiciously amuses himself with slops, putting his feet in hot water, and perhaps by taking few doses of James's powder, while the disease runs its course, and in three or four days exhausts itself. Doubtless the cure may sometimes be expedited by a mild aperient, one or two ten-grain doses of Dover's powder at bedtime, or the use of a mixture similar to Formula 314. In some persons, an opiate at bedtime (twenty minims of the *tinctura opii*) will cut short a catarrh; and in others, a good dinner with two or three *extra glasses* of wine, will have the same effect. Dr. C. J. B.

Williams assures us that any cold may be cured in forty-eight hours or less, by almost total abstinence from liquids; but it is difficult to meet with any one who has followed this practice.

2. CYNANCHE LARYNGEA.

Cynanche laryngea, or laryngitis, is not happily a very common disease: in the greater proportion of cases in which it has occurred it has proved fatal. Cold and wet are commonly the exciting causes of it; and it, generally speaking, is peculiar to adults.

The *symptoms* of acute inflammation of the larynx are often, at first, obscure, as the disease may make its approach in a very insidious manner. Generally, however, they are these: Fever, harsh cough, pain referred to the *pomum Adami*, difficulty of breathing and of swallowing, excessive anxiety, hoarseness or even complete loss of voice, and frequent spasmodic exacerbation of these symptoms, causing the most distressing paroxysms of threatened suffocation. The inspirations are long, and attended with a peculiar wheezing sound, as if the air were drawn through a narrow reed. The face is flushed, the eyes protruded, the lips swollen, the pulse hard: unless relief be afforded, the distress gets greater and greater; the larynx and trachea move with great rapidity upwards and downwards, and all the muscles of respiration are brought into action, so that the chest heaves violently; the patient tries to get to the open window to obtain more air; he soon becomes drowsy and delirious; and then speedily dies suffocated, the chink of the rima glottidis becoming closed from the swelling of the mucous membrane lining it, or from the effusion of serum into the subjacent areolar tissue.

The inflammation is often of very limited extent: the danger is owing entirely to its situation. But this danger can be averted by surgical *treatment*; by making an artificial opening into the trachea, through which the patient may breathe until the inflammation has subsided. The operation of tracheotomy often affords a striking example of the power of our art. Too long a period must not be

allowed to elapse before having recourse to it; since it had better be performed unnecessarily than too late.* Indeed, when it fails, it is generally because it is not performed sufficiently early. Mr. Porter† well remarks that tracheotomy allows the organ in which the diseased action is situated perfect repose; it removes the danger of the lungs becoming congested and engorged; it frees the patient from those terrible paroxysms of spasmodic suffocation; and in short it takes the place of all other treatment, which, besides being injurious from loss of time, *is often in itself positively detrimental*. He quotes, also, the opinion of Mr. Lawrence, that "bleeding, blistering, and the usual means for subduing inflammation, are here found totally inefficacious." Is it not then matter for great regret that many still recommend the free adoption of this antiphlogistic practice, and bid us persevere with it: the usual argument really amounting to this, that because all the cases have not died under this plan, therefore there is every ground for encouragement. After the operation, the patient's strength must be supported by milk, good beef-tea, and wine or brandy, if there be, as there usually is, much depression.

Edema of the glottis may sometimes arise from other causes besides inflammation, and produce the same effects as laryngitis. It is often due to boiling water, or the strong mineral acids, or alkalies taken into the mouth. There seems reason to believe that the poison of erysipelas may give rise to it. Tracheotomy is our only resource.

The larynx may also suffer from *chronic* disease. Thus chronic inflammation and ulceration is not uncommon in cases of pulmonary consumption; a species of phthisis is consequently known as *phthisis laryngea*. So, again, the membrane lining the laryngeal cartilages often becomes thickened and ulcerated in secondary syphilis. Polypi and warty growths may also arise from different parts of this

* See Mr. Fergusson's Practical Surgery, 3d ed., p. 641. London, 1852.

† Observations on the Surgical Pathology of the Larynx and Trachea, &c. &c. Dublin, 1837.

tube, and cause great impediment to the entrance and exit of air.* And lastly, foreign bodies, as coins, beans, stones, &c., are occasionally accidentally introduced into the wind-pipe. When sufficiently heavy they fall into one of the bronchi, usually the right, and give rise to all the symptoms of obstructed respiration; or they may become lodged at any part of the tube. Opening the trachea is generally the only remedy, so as to allow of the removal of the substance through the wound; or to permit of the inversion of the body, and thus facilitate the escape through the glottis of the coin, bean, or whatever the article may be.

3. CYNANCHE TRACHEALIS.

Cynanche trachealis, tracheitis, or croup, consists of inflammation of the trachea, often of the trachea and larynx, ending, in the majority of cases, in the exudation of false membranes upon the affected surface.

It is a disease of early life; most cases of it occur during the second year of childhood. It is often complicated with bronchitis or pneumonia.

Symptoms.—In the commencement they are those of a cold; slight fever, cough, hoarseness, drowsiness, suffusion of the eyes, and running at the nose. In a day or two the peculiar signs of croup begin to show themselves, commencing with an alteration in the character of the cough, which becomes attended with a peculiar ringing sound, rendering it “brassy;” this cough being also followed in a few hours by a remarkable change in the respiration. The act of inspiration becomes prolonged, and attended with a characteristic crowing or piping noise; readily recognized when once it has been heard. If now the fauces be examined, the tonsils will be found enlarged, and of a red color, but less intense than in tonsillitis; the uvula also is sometimes slightly swollen. As the disease advances, the fever increases, the breathing becomes more hurried and impeded, the cough more frequent; the

* Histoire des Polypes du Larynx. Par C. H. Ehrmann. Strasbourg, 1850.

pulse becomes weak and irregular, there is great thirst, and the child is very irritable and restless; and with features expressive of alarm and distress, he grasps at his neck, or thrusts his fingers into his mouth, as if to remove the cause of his sufferings. Exacerbations always take place at night, with remissions towards the morning. Should there now be a tendency towards a restoration to health, the cough will lose its peculiar clang, and become moist, whilst the crowing inspirations will almost cease. On the other hand, when the disease is about to end fatally, the drowsiness soon becomes extreme, though the sleep is uneasy; the child starts and wakes in terror; the breathing becomes gasping and interrupted; the skin gets cold and covered with clammy sweats; and the child often dies directly after an inspiration, or coma and convulsions ensue, and close the scene.

Sometimes this disease runs a very rapid course; though usually its duration ranges from four to ten days. Professor Gölis, of Vienna, relates the case of a healthy little boy, aged four years, who going into the open air on an extremely cold day, was attacked with croup, which proved fatal in fourteen hours.

Diagnosis.—The history of the attack, the hoarseness or loss of voice, the dry ringing cough, the croupal inspirations, and the fever, distinguish this disease from every other. It can indeed only be confounded with true laryngitis: but this latter affection occurs in adults, very rarely in children except as associated with croup; it causes a fixed burning pain in the larynx, increased by any examination; it does not give rise to the exudation of false membranes; and—if prolonged—it ends in suppuration or ulceration. The diagnosis between croup and laryngismus stridulus is simple; for in the latter there is an absence of fever and of the peculiar cough, while during the intermissions the patient is apparently well.

Treatment.—In no disease, perhaps, is it more necessary to be prompt and cautious. Bleeding, tartar emetic, and mercury are the measures on which we are usually taught to rely; but I cannot help thinking that this treatment is *unsound, since we find that however early and perseveringly*

applied, yet the disorder proves fatal. Would it not be better, then, to try the effects of a different and perhaps milder plan? For the reasons already stated, I should not advise the abstraction of blood; nor would I recommend large doses of tartar emetic or mercury. When the disease is seen early, the continuous application of hot fomentations to the throat will do great good; but if much benefit is not quickly apparent, emetics (F. 225) may also be administered; while, when the heat of the body is above the normal standard—as ascertained by the thermometer—a warm bath will lessen it. Thus it is clear that a patient having a temperature of 104° or 105° Fahr. must part rapidly with some of this heat if placed in water warmed only to 96° Fahr.; unless, indeed, as fast as the heat is given off it be regenerated.

Supposing that the disease advances notwithstanding these measures, I resort to the use of the iodide of potassium combined with assafoetida (F. 39), from which I think I have seen great benefit.

In order to prevent the formation of false membranes, it is said that mercurial inunction should be had recourse to from the commencement of the severe symptoms; half a drachm, or even a drachm, of the unguentum hydrargyri being gently rubbed in every four or six hours. The practitioner must use his own judgment as to the employment of this agent. No harm can arise from calomel given at the onset as a purgative, in doses of two, three, or four grains. In the latter stages of the disease, it will be necessary to support the powers of life by beef-tea; and wine, or a few drops of the aromatic spirits of ammonia, or of brandy, with water, should be frequently repeated. Formula 342 will often give strength, and act as a useful stimulant.

Can we do any good by tracheotomy? is a question the consideration of which must force itself upon every one treating a case of croup. Looking at the pathology of the disease, remembering that the inflammation generally extends into the bronchial tubes, that the serious dyspnoea for the most part arises from the albuminous exudation *obstructing the trachea and bronchi*, and that in no case

have we any reason to believe that suffocation is due to closure of the glottis, remembering these points, there seems to be much less chance of success than may be expected from the same proceeding in laryngitis; yet it must be remembered that those who have had most experience of this operation—M. Trousseau's name may be particularly mentioned—speak the most highly of it. I have only seen it performed in one case; but though the patient died, the temporary relief was so great, that I should be inclined rather strongly to recommend it again. Mr. Henry Smith, Surgeon to the Westminster Dispensary, also tells me that he has operated in four or five cases; all of which terminated fatally, though great temporary relief was experienced.

There is a formidable variety of croup, in which the laryngeal affection is connected with a specific inflammation of the fauces, soft palate, pharynx, and tonsils; and is followed by the exudation of false membranes on these parts. It occurs especially in some provinces of France, and has been described by M. Bretonneau under the name of *diphtheritis*. Sponging the parts with a strong solution of nitrate of silver, warm baths, the exhibition of bark, strong beef-tea, and wine are the means on which I should place most reliance. As the disease is most depressing, these remedies must be used with a liberal hand.

4. LARYNGISMUS STRIDULUS.

Laryngismus stridulus, infantile laryngismus, or child-crowing, is a spasmodic disease occurring in infants chiefly during the period of dentition; consisting of a temporary, partial, or complete closure of the rima glottidis, by which the entrance of air into the lungs is impeded or stopped.

Symptoms.—It is unattended by fever, almost its only symptom being the interruption of the breathing. The child is suddenly seized with dyspnoea, it struggles and kicks, is unable to inspire, and seems about to perish from suffocation: presently the spasm gives way, air is drawn in through the chink of the glottis with a shrill whistling or crowing sound, and the paroxysm is over; sometimes

to return shortly, or in a few hours, or not perhaps for days.

Pathology.—This affection was carefully investigated by Dr. Ley, who attributed it to pressure made by enlarged glands in the neck or chest upon the recurrent nerve, or upon some part of the eighth pair of nerves; subverting the exact antagonism by which the glottis is automatically and involuntarily kept open, and allowing its margins to come together, thus occasioning the dyspnoea and peculiar kind of inspiration so much like that of croup. It was reserved for Dr. Marshall Hall, however, to give the immediate explanation of the phenomena of this disease, by showing that it is to be attributed to some source of irritation producing reflex spasm—to some excitation of the true spinal or excito-motory system. It *originates*, says Dr. Marshall Hall, in—

1. *a.* The *trifacial nerve* in teething.
- b.* The *pneumogastric*, in over or improperly fed infants.
- c.* The *spinal nerves*, in constipation, intestinal disorder, or catharsis.

These *act* through the medium of—

2. The *spinal marrow*, and—
3. *a.* The *inferior* or *recurrent laryngeal*, the constrictor of the larynx.
- b.* The *intercostals* and *diaphragmatic*, the motors of respiration.

Treatment.—During the paroxysm this should be the same as that employed in resuscitating still-born children. Hot water to the lower parts of the body; cold affusion to the head and face; slapping the chest and nates; exposure to a current of cold air; and artificial respiration, if necessary. The vapor of ether or ammonia may also be applied to the nostrils, and as a last resource, tracheotomy may be performed.

The subsequent remedies must consist of purgatives, antispasmodics, tonics, and, above all, change of air. The diet should be very simple; a child at the breast should not be fed. Many of the diseases of infants are caused by

the silly obstinacy of some mothers, who are only happy when overloading the stomachs of their children.

5. DYSPHONIA CLERICORUM.

Dysphonia clericorum, or clergyman's sore throat, is frequently a nervous complaint, being unattended, at least in its early stages, by any organic lesion, but consisting rather of irritation of the investing membrane of the fauces. Subsequently, however, a series of morbid changes takes place, such as congestion, inflammation, or relaxation of the mucous membrane, enlargement of the tonsils, elongation of the uvula, and irritation, inflammation, morbid deposit, and ulceration of the mucous follicles. Dr. Horace Green, of New York, has described this affection when far advanced as consisting of a diseased condition of the glandular follicles of the mucous membrane of the throat and windpipe, commencing usually in the mucous follicles of the isthmus of the fauces and of the upper portion of the pharyngeal membrane, and extending by continuity until the glandulæ of the epiglottis, larynx, and trachea are extensively involved in the morbid action. He calls it *follicular disease of the pharyngo-laryngeal membrane*.

Symptoms.—These consist of an uneasy sensation in the upper part of the throat, with continued inclination to swallow, as if there were some obstacle in the œsophagus which could be removed by deglutition. The patient also makes frequent attempts to clear the throat of phlegm by coughing, hawking, and spitting; he will point to the larynx, too, as being the seat of pain. At the same time, the voice undergoes an alteration; there is loss of power and hoarseness; sometimes complete aphonia, especially towards the evening. On examining the throat and fauces, we shall find these parts presenting an unhealthy, slightly raw or granular appearance; the mucous follicles will be visible, sometimes filled with a yellowish substance, and a viscid muco-purulent secretion will be seen adhering to the palate and to the edge of the velum pendulum palati.

This sore throat may exist alone, or it may accompany

or follow laryngitis, bronchitis, or phthisis. Clergymen, public speakers, actors, singers, &c., are most liable to it.

Treatment.—In its early stages, when merely a nervous affection, the treatment must consist in the use of tonics, especially iron and quinine, cold shower-baths or sea-bathing, and temporary change of scene and occupation. When the disease is further advanced, a combination of internal with local remedies will be necessary. Iodide of potassium, iodide of iron, iodide of zinc, small doses of the bichloride of mercury with the tincture and infusion of cinchona, hydrocyanic acid, tonics, and opiates, will prove efficacious (F. 28, 29, 30, 332, 334, 336, 339, 354, &c.). The local treatment consists in the application of a solution of nitrate of silver (two to four scruples to the ounce of distilled water) to the diseased parts, even to the interior of the larynx if possible, by means of a whalebone probang about ten inches long, having a piece of fine sponge, the size of a pistol-bullet, attached to its extremity. I say "if possible" advisedly, because I really do not think that the sponge can be passed through the true vocal cords, even if it can be got between the lips of the glottis. However, as the application does good, it should be resorted to; the best method of using the sponge being described somewhat thus by Dr. Hughes Bennett: The patient being seated in a chair and exposed to a good light, the practitioner stands on the right side and depresses the tongue with a spatula held in the left hand. Holding the probang with the sponge saturated with the solution in the right hand, it should be passed carefully over the upper surface of the spatula exactly in the median plane, until it is above or immediately behind the epiglottis. The patient should be now told to inspire, and as he does so, the tongue must be dragged slightly forwards with the spatula, and the probang thrust downwards and forwards by a movement which causes the right arm to be elevated, and the hand to be brought almost in contact with the patient's face. The operation, of course, requires dexterity, since the rima glottidis is narrow, and unless the sponge comes fairly down upon it, the aperture is readily missed. The passage of the sponge into the

proper channel may be determined by the sensation of overcoming a constriction, which is experienced when it is momentarily embraced by the rima, as well as by the spasm and harsh expiration which it occasions.* The application will require to be made about every other day for two or three weeks. When the tonsils remain enlarged and indurated, as they often do after this disease, as well as after tonsillitis, various astringent gargles and inhalations, preparations of iodine, and the solid nitrate of silver have been employed. Not unfrequently, permanent and effectual relief will only be obtained by the excision of one or both of these glands. Mr. Harvey has condemned this practice, and has stated that removal of the tonsils interferes with the development of the genital organs. I have seen, however, so much benefit from the operation, without any bad results, that I cannot but doubt the correctness of Mr. Harvey's views.

6. BRONCHITIS.

Inflammation of the bronchial tubes may be acute or chronic.

1. ACUTE BRONCHITIS.—This is a dangerous disorder, more especially on account of the frequency with which the inflammatory action spreads to the vesicular texture of the lungs.

Symptoms.—The chief consist of fever, a sense of tightness or constriction about the chest, hurried respiration, with wheezing, severe cough, and expectoration, at first of a viscid, glairy mucus, which subsequently becomes purulent. The pulse is frequent and often weak; the tongue

* The fallacy of trusting to these sensations is well illustrated in the Report of the Commission of the New York Academy of Medicine, appointed to inquire into this subject: "We witnessed in Cases 11 and 21 the fallacy of Dr. Horace Green's opinion as to the success of his experiment, though based on so large an experience. In both instances, whilst positive that he had successfully passed the instrument (an elastic tube) into the trachea, the patient vomited through the tube, and thus demonstrated his error."

foul; and there is headache, lassitude, sickness, and great anxiety.

On practising auscultation in the early stage of the inflammation, two *dry* sounds will generally be heard, viz., *rhonchus* and *sibilus*, both of which indicate that the air-tubes are partially narrowed—that the mucous membrane lining them is indeed dry and tumid. Rhonchus in itself need give us no anxiety, as it belongs entirely to the larger division of the bronchial tubes; sibilus, on the contrary, bespeaks more danger, since it denotes that the smaller air-tubes and vesicles are affected. After a time, the inflamed mucous membrane begins to pour out fluid; a viscid, transparent, tenacious mucus is exhaled; this constitutes the second stage of the inflammation. Two very different sounds to those just noticed are then to be detected, viz., *large crepitation* and *small crepitation*, often called the *moist* sounds. As the air passes through the bronchial tubes it gets mixed, as it were, with the mucous secretion, so that numerous air-bubbles keep forming and bursting. When this occurs in the larger branches, it gives rise to large crepitation; when in the smaller, to small crepitation. We have, therefore, rhonchus and large crepitation as, respectively, the dry and moist sounds of the larger air-passages; sibilus and small crepitation as those of the smaller branches. On practising percussion, no appreciable alteration in the resonance of the chest will be discoverable.

Prognosis.—If relief be not afforded by the copious expectoration, or by remedies, the disease assumes a more dangerous character, the strength becomes much reduced, signs of great pulmonary congestion ensue, and symptoms of partial asphyxia follow, soon ending in death. In favorable cases, however, the affection begins to decline between the fourth and eighth day, and shortly either entirely subsides, or passes into the chronic form.

Treatment.—After a brisk purgative, a saline mixture containing ipecacuanha or squills (F. 314); or, if there be any depression, a stimulating expectorant (F. 227, 230, 232, 234) must be ordered. Gentle counter-irritation to the front of the chest, by turpentine stupes, or sinapisms,

will also be valuable. Should the phlegm appear to accumulate in the bronchial tubes, an emetic (F. 218, 221) will readily remove it. When physician to the Farringdon Dispensary, where the patients were very poor, I was in the constant habit of successfully treating acute bronchitis from the commencement with stimulating expectorants—F. 231 was a favorite form of prescription—good beef-tea, the inhalation of the steam of hot water, and counter-irritation by means of rubefacient liniments or turpentine stupes. Opium, cautiously given, often does much good; it is not to be employed if there are any indications that the blood is not properly aerated—if the complexion be dusky or bluish.

2. CHRONIC BRONCHITIS.—Chronic inflammation of the bronchial tubes is very common in advanced life. The slighter forms are indicated only by habitual cough, some shortness of breath, and copious expectoration; these symptoms being always aggravated by exposure to cold and wet. The majority of cases of winter cough in old people are examples of bronchial inflammation of a low lingering kind. It may arise idiopathically, or it may follow an acute attack.

There is a peculiar and severe form of this disorder, however, occurring in old people, and liable to run into pneumonia, which deserves notice. It has been described as *peripneumonia notha* (bastard peripneumony), or *catarrhus senilis*, or *subacute bronchitis*; it consists of diffused inflammation of the mucous membrane of the lungs, attended with excessive secretion of puriform mucus. Cullen, who well describes this affection, says it “has often the appearance only of a more violent catarrh; and, after the employment of some remedies, is entirely relieved by a free and copious expectoration. In other cases, however, the feverish and catarrhal symptoms are at first very moderate, and even slight; but after a few days these symptoms suddenly become considerable, and put an end to the patient's life when the indications of danger were before very little evident.” It sometimes proves fatal by the accumulated mucus, which the patient has not the power to expel, causing suffocation.

Persons poisoned to the second, or tertiary degree, by syphilis, are apt to suffer from chronic bronchitis, with considerable constitutional disturbance. Occasionally, in these cases, the bronchitis assumes the acute form.

Severe examples of chronic bronchitis, with abundant expectoration, are apt to be mistaken for cases of phthisis; consumption-curers often commit such an error of diagnosis, and then vaunt their very ordinary as extraordinary cures.

The *treatment* of chronic bronchitis must depend very much upon the age and constitution of the patient. The cases which have fallen under my own observation have been most benefited by various stimulating expectorants (F. 227, 228, 230, 232, 235); by tonics (F. 331, 354, 368); by cod-liver oil; good nourishing food; and wine, or some other stimulant. When the disease is due to the poison of syphilis, it will be most readily cured by iodide of potassium and Plummer's pill. Counter-irritation by sinapisms, turpentine stupes, or rubefacient liniments, will give great relief; blisters frequently do good. Patients often subsequently derive advantage from covering the chest with a large emplastrum ferri. Where the expectoration is profuse, and any difficulty in expelling it is experienced, emetics must be had recourse to (F. 218, 222, 223, &c.).

7. INFLUENZA.

Influenza or epidemic catarrh, or, in France, "la grippe," arises at times from some peculiar condition or contamination of the atmosphere. It is said to travel from east to west, and seldom to stay in one district more than six or seven weeks. Some visitations of it have proved more severe than others; one in 1782, which extended over the whole of Europe, was very fatal. Dr. Southwood Smith says that when the influenza broke out in London in 1847, it spread in one day over every part of the metropolis, and affected upwards of 500,000 persons.

Symptoms.—The chief symptoms of this mysterious affection are heat and dryness of skin, urgent headache,

coryza, hoarseness, cough, shortness of breath, and disorders of the stomach; together with all the signs of nervous and muscular prostration, such as an uncommon degree of languor, debility, and dejection of spirits. The suddenness and rapidity with which the attack occurs is very remarkable. It is more fatal to elderly than to other persons; in favorable cases it runs its course in about a week, merely leaving great feebleness.

Treatment.—About the treatment there can be no mistake. The patient must be kept in bed, and barley-water and nourishing broths administered. If the catarrhal symptoms are urgent, ten grains of Dover's powder may be given at night, or a mixture containing a little nitric ether and opium (F. 314). A sinapism applied to the chest, together with the inhalation of the steam of hot water, may be necessary. When prostration is the predominant symptom, stimulants are to be freely resorted to; such as wine, ammonia, or even brandy. The subsequent debility will be the soonest removed by tonics, especially by quinine and iron (F. 345, 364, 367).

HAY-ASTHMA.—Somewhat allied to influenza is a curious variety of catarrh, known as hay-asthma, or hay-fever, which Dr. Elliotson has described as a combination of catarrh and asthma. It is attended with the usual symptoms of a common cold, often, however, in an aggravated and distressing form; susceptible people suffer from it during the time of hay-making, if they get into the neighborhood of hay-fields or hay-stacks. Ipecacuanha is another substance which gives rise to similar symptoms in certain peculiar constitutions. In two or three instances, the susceptibility to hay-asthma has been removed by quinine and iron. During the seizure, antispasmodics (F. 80, 82, 83) will be found valuable. Dr. Walshe recommends a trial of creasote inhalations, once or twice daily, having seen remarkably satisfactory effects from them in two instances.

8. HOOPING-COUGH.

Pertussis, or hooping-cough, is an infectious disease; rarely occurring more than once in the same individual; attended with slight fever; and accompanied with a peculiar cough, which occurs in paroxysms at uncertain intervals. Its duration varies from two or three weeks to as many months. It is especially a disease of childhood.

Symptoms.—Hooping-cough appears to depend upon some peculiar poison which affects and irritates the pneumogastric or vagus nerve. In the commencement it produces a simple febrile stage of eight, ten, or twenty days' duration, sometimes accompanied, but generally followed by violent paroxysms of coughing. The series of coughs or expiratory efforts are so powerful, and expel the air so largely from the lungs, that the patient seems on the point of being suffocated; until a long-protracted inspiratory act follows, the rush of air through the contracted glottis causing the characteristic crowing or hooping noise. As Dr. Todd remarks, it is the signal of the child's safety. Directly the fit, which bears some analogy to laryngismus stridulus, is over, the child appears well, and returns to his amusements; even if it end in an attack of vomiting, the patient has a craving for food directly afterwards, and wants something to eat. The frequency with which the paroxysms of cough recur varies; there may be only two or three in the day, or as many in an hour.

Complications, &c.—The poison of hooping-cough may co-exist with other poisons, as with those of smallpox, measles, &c. It may also be complicated with bronchitis, pneumonia, disordered bowels, or some head affection. Dr. Graily Hewitt states that this disease, when it destroys life, generally does so, not by causing pneumonia, as has been thought, but by inducing catarrhal inflammation of the bronchial tubes, attended with collapse of a portion of the lungs. This airless state of the lung has been found to arise in young children from other causes besides hooping-cough; and also, according to Dr. Gairdner, in adults who have succumbed to bronchitis. It has been variously

designated as *disseminated lobular pneumonia*, *marginal pneumonia*, *carnification*, *atelectasis*, *pulmonary collapse*, *fœtal condition*, *apneumatoxis*, &c. Collapse of a portion of the lungs is not by any means necessarily fatal, unless it is extensive, or is badly treated by lowering measures; it is a condition which especially calls for stimulants, and strong liquid nourishment.

Treatment.—In the treatment of this disease our object must be to keep it simple, to prevent other affections from complicating it. In mild cases very little management is required; the patient should be warmly clothed, kept indoors, fed with light nourishing food, and allowed to drink freely of some mucilaginous fluid. In the more severe forms of the disease, emetics (F. 225) are often very beneficial, especially if their use be followed by mild sedative expectorants, such as the tincture of squills, and compound tincture of camphor. As in all diseases, bloodletting has been recommended by some physicians; but I think it is impossible not to see, as Dr. Todd points out, that this affection is not an inflammatory, but rather a spasmodic complaint; and that, consequently, on this ground alone it may be asserted that all antiphlogistic measures are to be discarded. The patient should be kept from cold air; the general nutrition should be maintained by food easily digested; the chest should be sponged back and front once or twice a day with cold water; and embrocations may be afterwards used to the same part. The best drugs are those known as antispasmodics, such as morphia, opium, henbane, conium, belladonna, hydrocyanic acid, assafoetida, camphor, chloric ether, and chloroform. It need hardly be mentioned that the greatest caution will be necessary in the use of these remedies, that they should be given in minute doses, and that their effects should be narrowly watched. Dr. Gibb states that nitric acid (F. 86) is a specific, but I have not found it so. In many instances great benefit will be produced by sponging the fauces and glottis with a strong solution of nitrate of silver, ℞j to ʒj. Where the secretion from the bronchial tubes is excessive, it should be checked by astringents, as, for example, by *alum*, sulphate of zinc, small doses of sulphuric acid

and infusion of bark, or gallic acid. When the case becomes chronic, a cure may often be effected by ferruginous tonics and change of air—by removal to the sea-side.

9. ASTHMA.

Asthma may be defined as great difficulty of breathing; accompanied with a wheezing sound of respiration; occurring in paroxysms; and ceasing at the end of a few hours with mucous expectoration, more or less abundant.

Symptoms.—A fit of asthma is either preceded by various digestive or other disturbances, or it occurs suddenly, without any warning. The patient awakes an hour or two after midnight with a sensation of suffocation, or constriction about the chest; the efforts at inspiration are convulsively violent; the expiration is prolonged, and comparatively easy; both acts, but especially the first, are attended with wheezing. Various postures are assumed to facilitate the attempt at filling the lungs; the patient stands erect, or leans his head forwards on his hands, or rushes to the open window, at which he will remain almost for hours gasping for air. The pulse is small and feeble; the eyes staring; the countenance anxious; the skin cold and clammy. His whole appearance is most distressing, and he looks beseechingly at the practitioner for relief from his misery. Then, after a certain lapse of time, comes a remission; cough ensues, and with the cough expectoration of mucus; and soon the paroxysm ceases, to allow the sufferer to fall into the long-desired sleep.

When the attack ceases with expectoration, the case is said to be one of *humid* or *humoral* asthma; when without, it is called *dry* asthma. Both forms are often connected with emphysema of the lungs, and with disease of the heart. The paroxysms are supposed to depend upon spasmodic constriction of the bronchial tubes.

Repetition of asthmatic fits often leads to dilatation of the right cavities of the heart, or to insufficiency of the tricuspid valve; this occurs most frequently when there is emphysema.

The treatment must have reference to the relief of the

fit, and the prevention of its recurrence. In the fit every effort must be made to relax spasm, and three agents, opium, stramonium, and chloroform, present themselves as eminently calculated to effect this object. Opium combined with sulphuric ether (F. 78) is often of great service. Such is also the case with the leaves and stalks of stramonium cut up, put into a pipe, and smoked; or stramonium cigars may now be obtained, a few whiffs of one of which will in many cases cause a temporary cure. The inhalation of the vapor of chloroform, in moderate quantity, is often very beneficial; yet in some cases, as with stramonium, it only does harm. Some practitioners assert that patients derive relief from the fumes of burning filtering paper which has been saturated with nitrate of potash, and dried; while others recommend belladonna, conium, hydrocyanic acid, strong coffee, &c. The *lobelia inflata* has of late been much praised, but though I have had frequent opportunities of employing it, the good effects have not been as well marked as could be desired. If ordered, it should be prescribed only in small doses— $\frac{m}{x}$ of the tincture—as it is very apt to induce distressing sickness. Sinapisms and turpentine stupes to the back and front of the chest seem occasionally to give relief. The tendency to asthma may sometimes be removed by tonics, by attention to the digestive organs, by the use of the shower or sponging bath, and by change of air. Asthmatic patients, as a rule, appear to be more benefited by a bracing than by a relaxing climate.

10. EMPHYSEMA.

The diseases of the lung thus denominated are of two kinds. One consists essentially of enlargement of the air-cells, atrophy of their walls, and obliteration of their vessels; this is called *vesicular* or *pulmonary* emphysema. When, on the other hand, there is infiltration of the air into the interlobular areolar tissue, or into the sub-pleural areolar tissues, the disease is known as *interlobular* emphysema. Both forms give rise to habitual shortness of *breath*, with occasional severe paroxysms of *dyspnoea*,

resembling asthma; they are at all times very distressing complaints, and quite unfit the sufferer for any active occupation. Emphysema is a common cause of asthma. The physical signs of this disease consist of unnatural clearness and resonance on percussion; while only a very indistinct vesicular murmur is heard on auscultation. The diseased side of the thorax is also more prominent and rounder than the healthy one. Thus, as regards percussion and auscultation, emphysema affords results the reverse of other affections; the disease consisting, as it were, of a superabundance of air which does not pass away, there is more resonance, but less sound in the air-passage, less respiratory murmur.

Emphysema can only be relieved by rest, warm clothing, attention to the general health, and by the occasional use of anodynes and antispasmodics (F. 77, 84). Stramonium may also be smoked; or the camphor cigarettes of M. Raspail, may be tried. Occasionally the vapor of chloroform is of great temporary service. A warm climate is often very beneficial to sufferers from this affection; the dyspnoea being always most urgent in cold weather. In interlobular emphysema, a cure is often effected by nature, the air becoming absorbed.

11. PLEURISY.

Pleuritis, or pleurisy, are terms applied to inflammation of the pleura, the serous membrane investing the lungs and lining the cavity of the thorax.

Symptoms.—The disease is ushered in with rigors, followed by fever, and an acute lancinating pain in the side, called a stitch; which pain is aggravated by the expansion of the lung in inspiration, by coughing, by lying on the affected side, and by pressure. There is also a short harsh cough, the skin is hot and dry, the cheeks flushed, the pulse hard and quick, and the urine is scanty and high colored. If we listen to the painful part of the chest at this period, we shall hear the dry inflamed membranes, the pulmonary and costal pleuræ, rubbing against each other, and producing a *friction sound*; if the hand be placed on the correspond-

ing part of the thorax, this rubbing may also be felt. But the sound soon ceases; either the inflammation terminates in resolution, and the two surfaces of the pleura regain their natural moisture and smoothness; or, the roughened and inflamed surfaces become adherent; or they become separated by the effusion of serum, and a kind of dropsy results, known as HYDROTHORAX. If the pleurisy has been severe, the effusion becomes excessive (it may vary from an ounce to several pints); and the fluid accumulating in the sac of the pleura compresses the yielding lung, suspends its functions, displaces the heart, and somewhat distends the thoracic parietes. When the serous fluid is mixed with pus, the disease is termed EMPYEMA. If we listen to the chest now, we shall feel the respiratory murmur diminished, in proportion to the quantity of fluid thrown out; where this is excessive and the lung is compressed backwards, flattened almost against the spinal column, no vesicular breathing at all will be heard, but instead we shall hear the air passing into the larger bronchial tubes, the condensed lung and the layer of fluid acting as conductors of sound; we then say that *bronchial respiration*, and *bronchial voice*, or *bronchophony*, exist. The bronchophony may be accompanied by a tremulous noise, resembling the bleating of a goat; it is then termed *ægophony*. If the lung be completely compressed, so that no air can enter even the bronchial tubes, then no sounds of any kind will be heard; but on the healthy side the respiration will be more distinct than natural, will be *puerile*. There will also be dulness on percussion all over the affected side, if the pleura be full of fluid; if it be only partially filled, we can judge of the quantity by placing the patient in different attitudes; for since the fluid will gravitate to the most dependent part of the cavity, so it will carry the dull sound with it. We shall also often be able to judge of the amount of the effusion by the dyspnœa which the patient suffers from; since this will, of course, be most urgent when the lung is most compressed. At the same time, also, the sufferer is unable any longer to lie on the sound side; *clearly because the movements of the healthy lung would be impeded by the superincumbent weight of the dropsical*

pleura. The pain, moreover, no longer prevents his lying on the diseased side. If we measure the two sides of the chest, the side containing the effusion will be found the largest; we must remember, however, that in many persons the right half of the chest is naturally rather larger than the left.

After a time the symptoms begin to decrease, and absorption of the effused fluid commences. Supposing the lung to be bound down by adhesions, it will not expand in proportion to the absorption of the fluid; the affected side will then shrink inwards, and instead of any longer remaining larger than the sound side, will become smaller.

Causes.—The most common causes of pleurisy are exposure to cold and wet. In cancer of the female breast pleurisy often occurs secondarily, either from the irritation of the pleura by a deposit of cancer beneath it; or in some instances, probably—as Dr. Walshe suggests—by the sub-inflammatory action on the confines of the diseased gland extending through the intervening tissues to the pleura. And, lastly, mechanical injuries will excite inflammation of the pleura. Thus the jagged ends of a fractured rib often give rise to it; while if they also wound the pulmonary pleura, air will escape from the lung into the pleural cavity. The presence of air in the pleura may also be due to other circumstances: thus it may arise from an external wound; or from ulceration from the extension of a tubercular cavity. When the pleura contains air alone, we say there is PNEUMOTHORAX; when, as generally happens, there is a liquid with the air, we call the disease PNEUMOTHORAX WITH EFFUSION. The physical signs of pneumothorax are great resonance on percussion, with indistinctness of the respiratory murmur on auscultation; the patient's breathing, cough, and voice giving rise to a ringing metallic noise like that produced by blowing obliquely into an empty flask, and hence called *amphoric resonance*. When there is also liquid with the air, we obtain in addition—on practising succussion—a sound known as *metallic tinkling*; which results from a drop of fluid falling from the upper part of the cavity and causing a little splash.

Treatment.—The indications in the treatment of pleurisy

are first to subdue the inflammation; and, secondly, to promote the removal of its products. As, probably, the more the patient is lowered, the more severe will be the results of the inflammation, I would advise the practitioner not to resort to bloodletting; but rather to trust to the administration of opium in full doses, while hot fomentations are sedulously applied to the inflamed side. When the pain is very severe, the removal of a couple of ounces of blood by cupping will possibly give relief sooner than any other proceeding, by unloading the congested vessels. But even before taking away this small quantity it will be better to try the effect of the fomentations, together with dry cupping. If the practitioner have any faith in the powers of mercury to control inflammation, he may administer calomel and opium. The bowels should be kept open by purgatives, if necessary; the diet should consist of gruel, arrowroot, and broths; and cooling refreshing drinks are to be allowed.

If these means prove insufficient and effusion takes place, we then endeavor to promote absorption. The patient must be kept on a moderate diet, free from stimulants; a succession of blisters should be applied to the diseased side; and purgatives and diuretics administered. The iodide of potassium (F. 23, 25) will often be useful; or a combination of squills, digitalis, and blue pill (F. 48) has been highly recommended. When these means fail, tapping the thorax so as to let the fluid out has been resorted to, and on many occasions with apparent success. The opinions of physicians vary as to the propriety of performing this operation.* My own view is, that it certainly ought not

* Dr. Addison believes, from the numerous cases seen every year at Guy's Hospital, that paracentesis thoracis is one of the worst and most deceiving operations in general practice. A serious cavity, he thinks, is almost invariably changed into a cavity pouring out purulent matter by the first operation; and the thick, leather-like false membranes lining the pleura soon make the operation one of very great difficulty and danger. Nature herself, if assisted by proper remedies, will often remove serous effusions from the pleura; but if once interfered with by instrumental assistance, the amount of pus separated from the system is almost incredible, and beyond her power to get rid of. Cases are mentioned of twelve and fourteen pints of purulent matter

to be performed unless the effusion is excessive ; nor until the attempts to procure absorption have been perseveringly adopted. When it is decided to resort to paracentesis, it will be as well to commence by making an exploratory puncture with a grooved needle ; if fluid issue, a trocar and canula may then be introduced. The best position for the puncture is probably the intercostal space between the fifth and sixth true ribs, at—or somewhat posterior to—their angles ; provided, of course, that the lung is not fixed to this part by adhesions, and that no good reason exists for selecting a different spot. It will probably be better to remove all the fluid ; if serum come out, the orifice should be closed and healed ; if pus, the aperture should be enlarged and kept open.

In some examples of pneumothorax, where the dyspnoea has been very urgent, it has been found necessary to puncture the pleural cavity with a grooved needle, to let the air out ; such cases, however, are very rare.

12. PNEUMONIA.

Pneumonia, or acute inflammation of the substance of the lungs, consists of three degrees or stages ; namely, first, that of engorgement ; secondly, that of red hepatization ; and, thirdly, that of gray hepatization, or purulent infiltration. In each stage there is fever ; more or less pain in some part of the chest—most severe at the commencement ; accelerated and oppressed breathing ; occasionally delirium ; cough ; and expectoration of viscid, rust-colored sputa, which unite into a mass so tenacious, that even inversion of the vessel containing them will not detach them.

In the first stage, or that of engorgement, the substance of the lung becomes loaded with blood or bloody serum. It is of a dark red color externally ; and on cutting into it a quantity of red, frothy serum escapes, while its appearance somewhat resembles the spleen. If we listen to the chest when the lung is in this condition, we shall hear very

drawn from the chest, but its production is very possibly due to the first opening made in the pleura.—*Lancet*, November 17, 1855.

fine crepitation; a sound which is known as *minute crepitation*, or *crepitant rhonchus*. If a lock of one's own hair be rubbed between the finger and thumb close to the ear, a sound will be produced resembling it. The natural respiratory or vesicular murmur is still heard mingled with this minute crepitation, especially at first; as the inflammation advances, however, the healthy sound is quite displaced by the morbid one. Percussion also, at first, affords the natural resonance, which gradually becomes obscured.

If the inflammation proceed, it passes into the *second stage*, or that of *hepatization*; in which the spongy character of the lung is lost, and it becomes hard and solid, resembling the cut surface of the liver, whence it is said to be hepatized. If we now practise auscultation, neither the minute crepitation nor the vesicular murmur are any longer perceptible. *Bronchophony*, however, often exists, more particularly if the inflammation be seated near the upper part or in the vicinity of the root of the lungs; it is accompanied also by *bronchial respiration*, these sounds being conducted by the solidified lung. The sound on percussion is dull over the whole of the affected part.

Advancing still further, we now have the *third stage of pneumonia*, or that of *gray hepatization*, or *purulent infiltration*; which consists of diffused suppuration of the pulmonary tissue. Circumscribed abscess of the lung is very uncommon; but diffused suppuration is said to be a frequent consequence of inflammation of the pulmonary tissue. There are no physical signs by which this stage can be diagnosed, until part of the lung breaks down and the pus is expectorated; *large gurgling crepitation* will then be heard.

If the inflammation subside before the stage of purulent infiltration, as it fortunately often does, then the hepatized condition may remain permanent, or may gradually cease. In the latter case we shall find the air slowly re-entering the lung; as will be indicated by a return of the minute crepitation, mingled with, and subsequently superseded by, the healthy vesicular murmur. During the onward progress of *pneumonia*, Redtenbacher, Simon, and Beale have proved that there is a total absence of chloride of sodium from

the urine ; which becomes restored in considerable quantity soon after the resolution of the inflammation. Dr. Beale states "that there is reason to believe that the absence of the chloride of sodium from the urine during the stage of hepatization, depends upon a determination of this salt to the inflamed lung ; and that when resolution occurs this force of attraction ceases, and whatever salt has been retained in the lung is reabsorbed, and appears in the urine in the usual way."*

Occasionally, in depressed constitutions, acute inflammation of the lung terminates in GANGRENE. The characteristic symptom of such an occurrence is an intolerably fetid state of the breath, resembling the odor which proceeds from external gangrenous parts. Unless the mortified portion be small, death will in all probability result.

Pneumonia may affect one lung or both ; or, technically speaking, may be double or single. The right lung suffers from inflammation twice as often as the left ; about once in eight cases both are affected. The lower lobes are more obnoxious to inflammation than the upper. The average duration of the disease, when uncomplicated, is about fourteen days : when complicated, about twenty-one days.

Pneumonia without bronchitis is probably never seen. It may occur with or without pleurisy ; when the pneumonia forms the chief disease, the double affection is termed *pleuro-pneumonia* ; when the pleurisy predominates, it is sometimes called *pneumo-pleuritis*.

The *treatment* of pneumonia remains to be considered ; though, after what has been said in speaking of the remedies for inflammation, only a few remarks are called for. Bleeding, tartar emetic, and mercury, are the agents on which we have been mainly taught to rely ; but these remedies will do great harm if applied to the treatment of pneumonia in the present day. On the contrary, the administration of a little liquor ammoniæ acetatis to act on the skin, perhaps counter-irritation by turpentine stupes, a light diet with a free supply of cold water, together with

* Medico-Chirurgical Transactions, vol. xxxv. p. 375. London, 1852.

strong beef-tea and wine as soon as there are any indications of weakness, will prove exceedingly valuable. When the crisis occurs by sweating or by diarrhoea, care must be taken not to check it unnecessarily.

Should the inflammation end in *gangrene*, stimulants and tonics will be especially needed. When the odor of the breath is very offensive, F. 72 may be prescribed. Dr. Skoda, of Vienna, has published several cases in which the symptoms gave way on the use of terebinthinate vapors and the free exhibition of quinine. The inhalations are made by pouring oil of turpentine on boiling water; the vapor being inspired for about fifteen minutes every two or three hours.

13. PHTHISIS.

Tubercular phthisis, or pulmonary consumption, is a constitutional disease manifesting itself chiefly by certain changes in the lungs.

Pathology.—The origin and formation of tubercle has already been considered in the Section on Tuberculosis. It is only necessary to mention, therefore, that in phthisis the tubercular deposit takes place in the areolar tissue between the air-cells, in the air-cells themselves, and in the smaller bronchial tubes communicating with them; and that wherever a speck of this matter is deposited from the blood, it continues to increase by constant addition. In its hard state it is called crude tubercle. After a time, inflammation arises in the pulmonary substance surrounding the deposit, suppuration occurs, the tubercular matter softens and breaks down, and at length is gradually expelled through the bronchi, trachea, and mouth, leaving cavities or excavations behind, of various sizes. Sometimes these cavities close and heal; more frequently tubercular matter continues to be deposited on their sides, and in other parts of the lungs, until these organs become diseased to an extent incompatible with the continuance of life.

Symptoms.—The general symptoms of phthisis are *cough*, *hæmoptysis*, debility, expectoration, *dyspepsia* in

some form or other, acceleration of the pulse, slight dyspnoea, loss of flesh, hoarseness, sweating, and diarrhoea. A mark at the reflected edge of the gums, usually deeper in color than the adjoining surface, and producing a festooned appearance by the accuracy with which it corresponds to the curve of the gingival border, has been observed to be very frequently present in these cases.* Sometimes, especially in males, fistula in ano is one of the earliest symptoms. The disease ordinarily sets in with a short dry cough, which the patient often refers to the trachea. It is doubtless due to tubercular deposit irritating the bronchial membrane; it may continue some time without being aggravated, or without the supervention of any other symptom. Occasionally there is hæmoptysis; which, recurring at variable intervals, gives the first intimation of the disease. The hemorrhage may be so considerable as to kill *directly* or *indirectly*. Dr. Walshe states that his analyzed series of 131 cases of phthisis furnishes but two examples of such mode of death. In one, death was direct from asphyxia, owing to the plugging of the trachea and bronchi with blood; in the other, death occurred from exhaustion at the end of five days.† The patient complains also of languor; slight exertion, ascending a hill or going up stairs, causes fatigue, hurries the breathing, and often gives rise to palpitation; the uterine functions are more or less disturbed in women; and the liver becomes congested and tender. When this state has lasted for some time, during which the cough and expectoration‡ have been increasing,

* Clinical Lectures on Pulmonary Consumption, by Theophilus Thompson, M. D., F. R. S., &c. London, 1854.

† On Diseases of the Heart, Lungs, and Aorta, 2d edit., p. 505. London, 1854.

‡ "The microscopical elements of phthisical sputa," says Dr. Walshe, "are very numerous. First, epithelium, tessellated, cylindrical, and ciliated from the bronchial tubes; salivary fluid, and epithelium from the mouth. Secondly, blood-disks (even when no reddish tint exists to the naked eye), melanic cells and molecules, molecular fat, oil-globules and saline matter, crystalline and amorphous. Thirdly, exudation-matter in patches, exudation-cells and pus-cells. Fourthly, fragments of pulmonary

hectic fever appears. The debility becomes more marked; the countenance becomes frequently flushed; chilliness is complained of in the evening, while on awaking in the morning the body is found bathed in a profuse sweat; and there is loss of appetite, with thirst, &c. The patient now rapidly loses flesh; diarrhoea—either due to disordered secretions, or to ulcerations of the mucous membrane of the ileum and colon—often sets in and increases the debility; the urine is found sometimes to contain albumen, and occasionally minute quantities of sugar; the lower extremities frequently become painful and œdematous; and death soon ends the scene, the mental faculties remaining clear until the last few hours.

Diagnosis.—Some authors have divided phthisis into three stages. During the *first*, that in which tubercles become developed in the lungs, neither the local nor the general symptoms warrant us in announcing the presence of any other affection than severe catarrh; if the tubercles be deposited, however, in considerable quantity, the sound on percussion will be dull, the act of expiration will be prolonged, from impairment of the elasticity of the lungs and *bronchial respiration* and *bronchophony* will be heard; the vesicular murmur will be feeble or even absent. In the *second* stage, the tubercles increase both in number and size, so as to compress and obstruct the substance of the lung, and occasion dyspnoea; *large crepitation* will be distinct, and in the sound lung *puerile breathing*. In the *third* stage, the tubercles become softened; they make an

fibre, capillary vessel and nerve. Fifthly, dark molecular matter, soluble neither in ether nor in hydrochloric acid, and probably tuberculous; and, in **very rare** cases, cells, apparently those of tubercle: I have, **at least occasionally**, seen, in the opaque buff-colored striz of **comparatively clear** sputa, cells non-nucleated and more angular in **outline** than those of exudation-matter. Sixthly, the vibrio *lineola*, and mycodermatous entophytes."—*Opus cit.*, p. 507. The **presence** of fragments of tissue indicates breakage of the lung **substance**: the existence of tubercle-cells is, of course, distinctive of phthisis; while the other characters have no precise diagnostic signification.

opening for themselves through some of the surrounding or involved bronchi, and being thus evacuated, they give rise to the formation of cavities. Auscultation now elicits a peculiar sound, called *gurgling*, caused by the bubbling of air with the pus or mucus contained in the cavity. Gurgling, it must be remembered, may also arise from that rare disease, circumscribed abscess of the lung, as well as from the mixture of air with liquid in a dilated bronchus affected with chronic inflammation. When the cavity contains no liquid, we hear *cavernous respiration*; if it be large, *amphoric resonance*, and *pectoriloquy* will also be distinguishable. Notwithstanding the existence of one large or of numerous small cavities, percussion almost invariably affords a dull sound, owing to the layer of lung forming the wall of the cavity being dense and solid.

The *spirometer* is an instrument for measuring the volume of air expired from the lungs; and as this volume is always diminished in each stage of phthisis, we have a valuable aid to diagnosis, for which we are indebted to Dr. Hutchinson. The quantity of air expired after the most complete inspiration is termed by this gentleman the *vital volume* or the *vital capacity*. Now the vital capacity always increases with stature; it will also be slightly affected by weight, but not sufficiently, as a rule, to interfere with the correctness of the following table, which is intended to show the capacity in health and in the three stages of phthisis:—*

* When the vital capacity is to be tested, the patient should loosen his vest, stand perfectly erect, take as deep an inspiration as possible, and then place the mouth-piece of the spirometer between his lips. The observer having opened the tap, the patient empties his lungs, making the deepest possible expiration, at the termination of which the operator turns off the tap, thus confining the air in the receiver. The receiver is then to be lightly depressed until the surfaces of the spirit in a bent tube on the outside of the instrument are on a level with each other, when the vital capacity may be read off from the scale.

<i>Height.</i>				<i>Capacity in Health.</i>	<i>Capacity in Phthisis Pulmonalis.</i>					
<i>Ft.</i>	<i>in.</i>	<i>Ft.</i>	<i>in.</i>	<i>Cub. in.</i>	<i>1st. Stage. Cub. in.</i>	<i>2d. Stage. Cub. in.</i>	<i>3d. Stage. Cub. in.</i>			
5	0 to 5	1	...	174	...	117	...	99	...	82
5	1 " 5	2	...	182	...	122	...	102	...	86
5	2 " 5	3	...	190	...	127	...	108	...	89
5	3 " 5	4	...	198	...	133	...	113	...	93
5	4 " 5	5	...	206	...	138	...	117	...	97
5	5 " 5	6	...	214	...	143	...	122	...	100
5	6 " 5	7	...	222	...	149	...	127	...	104
5	7 " 5	8	...	230	...	154	...	131	...	108
5	8 " 5	9	...	238	...	159	...	136	...	112
5	9 " 5	10	...	246	...	165	...	140	...	116
5	10 " 5	11	...	254	...	170	...	145	...	119
5	11 " 6	0	...	262	...	176	...	149	...	123

This table reads thus : A man between 5 ft. 7 in. and 5 ft. 8 in. should breathe in health 230 cubic inches ; in the first stage of consumption this will be reduced to 154 ; in the second, to 131 ; and in the third, to 108 cubic inches.

Another very early, and, therefore, highly important sign of pulmonary consumption is *loss of weight*. A slow and gradual loss is more serious than a rapid and regular diminution in weight ; *a steady loss always precedes tuberculosis*. Dr. Hutchinson, from an examination of 2650 healthy men at the middle period of life, has deduced the following table :—

Exact Stature.			Mean Weight.			Weight increased by 7 per cent.		
Ft.	in.		St.	lbs.	lbs.	St.	lbs.	lbs.
5	1	...	8	8	or 120	...	9	2 or 128
5	2	...	9	0	" 126	...	9	9 " 135
5	3	...	9	7	" 133	...	10	2 " 142
5	4	...	9	13	" 139	...	10	9 " 149
5	5	...	10	2	" 142	...	10	12 " 152
5	6	...	10	5	" 145	...	11	1 " 155
5	7	...	10	8	" 148	...	11	4 " 158
5	8	...	11	1	" 155	...	11	12 " 166
5	9	...	11	8	" 162	...	12	5 " 173
5	10	...	12	1	" 169	...	12	13 " 181
5	11	...	12	6	" 174	...	13	4 " 186
6	0	...	12	10	" 178	...	13	8 " 190

This reads : A man of 5 ft. 8 in. should weigh 11 st. 1 lb., or 155 lbs. (14 lb. = 1 stone) ; he may exceed this by 7 per cent., and so attain 11 st. 12 lbs., or 166 lbs., with-

out affecting his vital capacity; beyond this weight his respiration becomes diminished.

Causes, &c.—Phthisis may be inherited or it may be acquired; it is not contagious. Of 1000 cases, collected by Dr. Cotton, at the Consumption Hospital, 367 were hereditarily predisposed; 582 were males, and 418 females. The left lung suffers more frequently than the right; in Dr. Cotton's cases, the left lung was affected in 455, the right in 384, and both in 161. The apices and posterior parts of the upper lobes of the lungs are ordinarily the situations in which the deposit first takes place.

No period of life is exempt from this scourge; according to the Registrar-General, half of the deaths that happen on an average in London, between the ages of twenty and forty, are from consumption and diseases of the respiratory organs.* Insufficient and bad food, impure air, the dirty dust suspended in the air which the people of London have to breathe, confinement, deficiency of light, and immoderate indulgence of the sensual passions, may be regarded as frequent causes. Its ordinary duration varies from about six to twenty-four months; it very rarely proves fatal in less than three months, unless indirectly from severe pneumonia or pleurisy.

Treatment.—This resolves itself into that necessary for the prevention of phthisis, and that to be adopted to stay its course when it has once developed itself. As regards prevention, I need only refer to the observations on Scrofula, as the remarks there made apply with equal force to the disease under consideration.

When the disease is present, when tubercles have become developed in the lungs, we must endeavor to *improve the general nutrition*, by attention to the quantity and quality of the food, by pure mild air, by warm clothing, and by the administration of cod-liver oil. As regards the diet, only the most nutritious food should be allowed; an animal diet is absolutely necessary, so long as the powers of the stomach and alimentary canal are sufficiently strong to

* Weekly Return of Births and Deaths in London, July 26, 1856.

digest and assimilate it. When the powers of the digestive organs fail, pepsine, in doses of gr. xv, with the two principal daily meals, should be ordered. Milk is also very nutritious, and so are raw eggs (F. 4, 14). Strong broths, a small allowance of wine, or of good bitter ale, or of Guinness's stout, may often be advantageously permitted. Too long an interval should not elapse between each meal.

Change of air and scene is an important element in the treatment; though it must be remembered that this change is to be resorted to only in the early stages; for it is cruel to send patients away merely for them to die. When softening of the tubercles has begun, it will be too late to expect much benefit. *Torquay*, the *Undercliff of the Isle of Wight*, and *Hastings*, are places in our own country admirably adapted for consumptive patients. But a more complete change of climate is often beneficial, and then we may send a patient to *Madeira*; Funchal and Santa Cruz being, I am told, the best parts of the island. Dr Francis speaks very highly of *Malaga*, which, indeed, seems to be the El Dorado of climates: "There is no place in Spain, nor in the whole of Europe, as far as our present information goes, that possesses a climate at once so mild and equable, with so little variation from day to day, as *Malaga*."* And lastly, Dr. Mitchell strongly recommends the climate of *Algiers*. Speaking of the city of *Algiers*, he says: "With difficulty, if at all, will the European traveller find a spot on earth where natural beauties so combine with those of man's creation to please and interest him. One of the long sides of the oblong of which 'the Place du Gouvernement' is formed is open to the sea, and commands a view of the bay, the harbor, the site of the ancient Rusgunium, the peaks of the distant Atlas, and the verdure of the Sahel slopes." The "Place" itself is filled with a strange mixture of all races—the Arab, the Moor, the turbaned Jew of Africa, the Maltese fisherman, the Spanish fruitseller, the veiled women of Moslem, the picturesque Jewess, the pretty Spaniard, &c. &c. The invalid will find objects of interest without seek-

* On Change of Climate, &c. London, 1853.

ing them, and will be gratified and amused merely by wandering in the open air. The mean annual temperature is about 69° Fahr. The mean temperature for each season is, Winter, 62.13; Spring, 61.04; Summer, 75.09; and Autumn, 78.26. The mean annual temperature more nearly approaches that of Malta than of any other of the more ordinary resorts of the invalid. It exceeds it, however, by 2°; while it exceeds Malaga by 3°, Madeira by 4°, Rome by 9°, Nice by 10°, and Pau by 13°. The mean annual temperature of Cairo, however, is 3° higher, yet its winter is 4° colder than that of Algiers. Compared with other points on the Mediterranean, Algiers has a warmer and a less varying climate than Marseilles, Nice, Genoa, and Naples, while it more nearly approaches, but is still superior to Malta, Corfu, and Gibraltar. Dr. Mitchell also quotes the opinions of M. Odrultz, which are to the following effect: "1st. The climate of Algiers is opposed to the generation as well as to the evolution of tubercle in the lungs; 2d. This morbid production is observed but very exceptionally among the indigenous population; 3d. Europeans who do not bring the germ of the disease to Algiers almost never become phthisical; 4th. Those who do bring not only a predisposition, but actually crude tubercle, in greater or less quantity, in the lung, are often cured; or, in the worst cases, the progress is extremely slow; 5th. When the tubercle is softened, the climate is no longer favorable.*

In addition to these means, there are certain agents which must be especially mentioned. *Cod-liver oil*, particularly the brown variety, is a most valuable remedy; it nourishes the body; diminishes the cough, expectoration, and night-sweats; and, there is every reason to believe, checks the fresh exudation of tubercular matter. In the beginning, a teaspoonful should be given twice or thrice daily, and gradually increased to a tablespoonful three times a day. Where the stomach will not tolerate this agent, enemata containing it may be tried; or it may be

* On the Climate of Algiers. British and Foreign Medical-Chirurgical Review, vols. xvii. and xviii. London, 1856.

introduced into the system by inunction (F. 251), and by applying lint saturated with it to the chest.

The various preparations of *iron* (F. 336, 339, 345, 354, 364, 367, &c.) are very useful in many cases; especially during the first stage of the disease, provided there be neither hæmoptysis nor pulmonary congestion. *Iodine* and its compounds, especially the iodide of potassium, have been highly praised; the iodide of iron is the best preparation. *Liquor potassæ* is often useful in the early periods, particularly when combined with bark (F. 351). When the cough is severe, small doses of opium or morphia, frequently repeated, give relief; when there is troublesome hæmoptysis, the oil of turpentine, $\mathfrak{m}x$ every hour, often checks it, or the acetate of lead (F. 106) may be tried; when the heart's action is irritable, it may be controlled by hydrocyanic acid with or without small doses of digitalis; if the night-sweats weaken and annoy the patient, they may often be checked by gallic acid, or by the mineral acids with bark, or especially by the oxide of zinc in four grain doses at bedtime; while the diarrhœa, when urgent, must be stopped by catechu, logwood, the enema opii of the London Pharmacopœia, or by F. 90, 91, 92, 102, 110, &c. Counter-irritation to the chest by sinapisms, turpentine stupes, and particularly by the iodine paint (F. 197), often gives relief. Pyro-acetic spirit or naphtha has been highly but undeservedly praised, since it more frequently does harm than good; and the same observation applies to arsenic, oxalic acid, phosphate of lime, oxygen gas, blisters, dry cupping, daily emetics, and a host of similar and dissimilar remedies.

14. CANCER OF THE LUNG.

Pulmonary cancer, most commonly of the encephaloid kind, is a rare disease; it may occur as a primary infiltration, or as a secondary nodular deposit.

When it occurs primarily, the *symptoms* will vary with the extent of the disease; there will, however, often be *found, flattening* of the affected side, impairment of the *respiratory* movements; and dulness on percussion. More-

over, pain, emaciation, night-sweats, failure of the powers of life, dyspnœa, cough, purulent expectoration, often mixed with blood and of a dark color, and sometimes fetor of the breath, will be present; chronic bronchitis also frequently complicates the disease. In secondary cancer the symptoms are very obscure; indeed dyspnœa is often the only indication afforded during life. As regards the *treatment*, we can only attempt to relieve the symptoms as they arise; while we try to support the strength by nourishing food and stimulants as long as possible.

The term *spurious melanosis* has been applied to those collections of black carbonaceous matter which are so frequently found in the lungs of old people who have lived for some years in large towns. They are probably derived from the soot inhaled with the *fresh air*.

15. PERICARDITIS.

Pericarditis, or inflammation of the external serous covering of the heart, is a severe disease.

Causes.—It frequently arises from acute rheumatism, from the contaminated state of the blood produced by renal disease, from damp and cold, and from mechanical injuries. Dr. Ormerod reduces all cases of pericarditis to two classes: 1. Rheumatic pericarditis; 2. Non-rheumatic pericarditis. In the first, the disease is always well marked, it is associated with affections of the joints, women appear rather more subject to it than men, and it is rarely directly fatal; in the second, the inflammation occurs at a later period of life, is most common in men, occurs most frequently in bad constitutions, and is very often fatal.

Symptoms.—These are high fever; pain referred to the region of the heart, often darting through to the left scapula, upwards to the left clavicle and shoulder, and down the arm; violent palpitation, the motions of the heart being tumultuous, and perceptible at a distance from the patient; irregularity of the pulse; hurried respiration; incapacity of lying on the left side; strong pulsation of the carotids; anxiety of countenance; and frequently *noises in the ears*, giddiness, and epistaxis. As the dis-

ease advances, there is extreme debility, cough, suffocative paroxysms, occasionally a tendency to syncope, and œdema of the face and extremities; the heart's action also becomes much weaker, the impulse irregular and trembling, and the sounds weakened and altered in character. In severe cases indications of disturbance of the nervous centres frequently show themselves; especially great restlessness, distortion of the features, tetanic spasms, and delirium. All these symptoms often vary much in different cases; thus, as Dr. Hope has remarked, if the effusion which results from inflammation consists almost entirely of coagulable lymph, or if the serum thrown out has been rapidly absorbed and adhesions early effected, the circulation will be less interfered with, and less suffering will result, than in those more formidable cases where there is a copious fluid effusion painfully distending the inflamed membrane, pressing upon the heart, and embarrassing its movements.

On practising auscultation, we shall find, in the earliest stages, increased intensity of the natural sounds; if endocarditis coexists, as it so frequently does, a loud systolic *bellows-murmur* will also be heard. Very early, too, a distinct *alternate rubbing* or a *to-and-fro sound*, as Dr. Watson terms it, will be audible. The bellows-sound indicates fibrinous deposits in the texture as well as on the surface of the valves, from inflammation of the internal membrane of the heart, the endocardium, and it generally continues for life. The to-and-fro sound is indicative of inflammation of the pericardium, and it generally ceases in a few days when this membrane becomes adherent to the heart, as it always does if the patient survive. When copious effusion takes place, we shall have dulness on percussion over a larger surface than in health; if the fluid does not become absorbed, we say that *hydro-pericardium* exists, which usually proves fatal.

If we classify the physical signs of pericarditis, they will be as follows:—

1. Sensations of friction communicated to the hand.
2. Friction-sounds: the "attrition murmurs" of Hope.
3. Extension of dulness over the heart, resulting from *liquid effusion*.
4. Friction signs, attended with, or pre-

ceded by, valvular murmurs. 5. Signs of eccentric pressure analogous to those of empyema. 6. Signs of excitement of the heart. 7. Signs of weakness or paralysis of the heart.

Prognosis.—Pericarditis, especially the rheumatic variety, is not so much to be feared for its immediate danger, as for the traces of permanent injury which it leaves behind. The endocarditis which so frequently accompanies it, especially produces mischief to the valves of the heart. Hence an individual, after apparent recovery, seldom becomes as strong as he was before the attack; he suffers occasionally from cough and shortness of breath, and from palpitations of the heart on moderate exertion. Sometimes the symptoms remain latent for a few years; that is to say, they are not appreciable to the patient, who flatters himself that he is free from all traces of his attack. But after a time—much shorter in those who have to work hard for their daily bread, than in the well-to-do members of society—the health begins to fail: the weakness, difficulty of breathing, and palpitations return: dropsical symptoms set in: or perhaps another attack of inflammation takes place, and proves fatal.

Treatment.—In no disease was the lancet used with a more unsparing hand only a few years since, than in inflammation of the pericardium. More extended experience has shown us, however, that this heroic and sure method, as it was deemed, of extinguishing the morbid action, is not only uncertain, but often very dangerous. Then we were also taught the great importance of rapidly getting the system under the influence of mercury, after bleeding. Yet when we look to the authorities of the present day, what do we learn? The question is well answered by Dr. Markham, who says: "We find one of the most observant and practical physicians amongst us admitting that the firm faith which he himself once reposed in the efficacy of this remedy, has been undermined by the truth-telling effects of further experience."* The remarks already made on the use of mercury in inflammation quite confirm this opinion.

* *On Diseases of the Heart, &c.* London, 1856.

The treatment which I adopt is that practised by many for the relief of acute rheumatism: the two principal remedies being opium and the vapor bath. From these agents I believe that I have seen the greatest benefit; and certainly in no instance have they been prejudicial. They give great relief to the patient's sufferings, without inducing debility; and they in no way complicate the symptoms. The quantity of opium which will be needed will vary with the severity of the pain and restlessness; but usually full doses, one grain, every three or four hours, will be wanted. Sometimes one vapor bath suffices: in other cases, it is necessary to repeat it daily, for three or four times. Alkaline drinks (F. 318, 319, 323) will also do good.

In most cases it will be necessary to administer a few doses of some purgative: the neutral salts (F. 133, 154) will generally agree well. At first the nourishment should be light, consisting of gruel, arrowroot, and mutton broth. Directly the strength begins to fail, however, the diet must be more strengthening; and milk, strong beef-tea, and wine freely allowed. Dr. Stokes states that he is convinced patients are often lost from want of stimulation at the proper time; and he directs us to give support directly the pulse becomes feeble or intermittent, or the jugular veins become turgid, or pallor and coldness of the surface set in, or a tendency to faint upon exertion is manifested. "It may be laid down as a general principle that there is no local inflammation whatever, the mere existence of which should prevent the use of wine, if circumstances require it. In two cases especially, namely, cerebritis and pericarditis, we find the greatest timidity in practice with respect to the use of wine. Yet even in the first case it may be required; and in the second its employment is imperative, when, as too often happens, excessive depletion has been resorted to."*

Absolute repose of body and mind in all cases is important.

When the effusion into the pericardium is abundant, a

* *The Diseases of the Heart and the Aorta*, p. 88. Dublin, 1854.

large blister should be applied over the præcordia; or a succession of blisters may be necessary. The iodide of potassium (F. 23, 26) has been advantageously administered to promote absorption. It has been proposed, as a forlorn hope, in obstinate hydro-pericardium, to remove the fluid by the introduction of a trocar and canula. M. Aran, physician to the Hôpital St. Antoine, Paris, relates a case of pericarditis with copious effusion in a young man aged 23, which he treated by an injection of iodine. The pericardium was punctured from below upwards, with a capillary trocar, in the fifth intercostal space, a little below the spot where the dulness on percussion was well marked; about 28 ounces of a transparent reddish serum were removed. A mixture, formed of four drachms of tincture of iodine, fifteen grains of iodide of potassium, and an ounce and a half of water, was then injected without causing any pain; a drachm or two was allowed to escape before closing the wound. The fluid having reaccumulated, the operation was performed a second time with a stronger injection, formed of equal parts (3xij) of tincture of iodine and water, with one drachm of iodide of potassium. The treatment was successful.

16. ENDOCARDITIS.

Endocarditis, or inflammation of the membrane which lines the interior of the heart and its valves, is of great interest to us as pathologists and physicians, owing to the severe organic diseases which spring from it.

Symptoms.—It chiefly gives rise to a sense of oppression and uneasiness at the præcordial region; fever; small, feeble, and intermittent pulse; great anxiety; cold sweats; oppressive dyspnoea; jactitation; and syncope. When the inflammation is only of limited extent, or when it assumes a chronic form, the symptoms are much milder and more obscure.

Diagnosis.—If we apply the hand to the chest in simple endocarditis, the action of the heart will appear to be very violent; sometimes a vibratory thrill will be felt. *Percussion often discovers an augmented extent of dulness in the*

præcordial region; this dulness may be distinguished from that caused by pericardial effusion, by the beat of the heart appearing superficial instead of remote and distinct. If we listen to the heart's action we shall detect a bellows-murmur, the most constant and characteristic of the phenomena of endocarditis. The murmurs of purely acute endocarditis are thus arranged in order of frequency by Dr. Walshe: Aortic obstructive; mitral regurgitant; aortic regurgitant; aortic obstructive and mitral regurgitant together; aortic obstructive and regurgitant together. Pulmonary systolic and diastolic murmurs are infinitely rare. Dr. Walshe has never observed acute obstructive mitral murmur, nor acute regurgitant tricuspid murmur.*

For the further consideration of the physical signs, see the section on Diseases of the Valves of the Heart.

Terminations.—The terminations of acute endocarditis are permanent valvular disease, followed by implication of the heart's substance, and all their combined consequences. Death rarely occurs from the acute disease.

Treatment.—This must be the same as that recommended for pericarditis.

17. CARDITIS.

Carditis, or inflammation of the muscular substance of the heart, seldom occurs as a distinct affection; being generally combined with pericarditis, or endocarditis, or with both. An instructive example has been recorded by Mr. Salter,† in which the disease ran its course in seven weeks. It commenced with an acute pain in the left side of the chest, which came on when the patient was walking, lasted a short time, and recurred about a week afterwards, whilst he was using the same exercise; it subsequently became very frequent, and was induced by the slightest exertion. When Mr. Salter first saw him, about a week before his death, there was orthopnœa, and an uneasy sensation or dull pain referred to the stomach and middle of the sternum.

* Opus cit., p. 611.

† *Medico-Chirurgical Transactions*, vol. xxii. p. 72. London, 1839.

Venesection, calomel and opium, and counter-irritation were the means adopted to stay the disease; but they were unavailing, and death took place. At the *post-mortem* examination the pericardium was found inflamed, especially its diaphragmatic portion; its vessels were distended, and spots of ecchymosis were found beneath the serous membrane. The substance of the heart was moderately firm; but the left ventricle had almost entirely lost the color of muscle, pus could be scraped from its surface, and in some parts there were small cavities in the muscular substance containing pus.

18. VALVULAR DISEASES OF THE HEART.

Causes, &c.—Most of the alterations in the internal lining membrane of the heart result from inflammation, which gives rise to a deposit of lymph upon or beneath the serous membrane. The valves thus lose their thinness and transparency, become thick, puckered up, and adherent to each other or to the opposite walls of the channel. Independently of inflammation, the valves may become covered with warty vegetations or excrescences, or they may be converted into bone, or they may be the seat of atheromatous or other deposits.

The effects are twofold: either to contract and narrow the orifice and so obstruct the passage of the blood—*valvular obstruction*; or by thickening and shortening the valves, to make the orifice more or less patent, and hence permit of regurgitation of blood—*valvular insufficiency, regurgitant disease of valves, &c.* There may be only valvular obstruction or valvular insufficiency in any given case; but often these conditions co-exist.

Diagnosis.—In the diagnosis of these diseases attention must be directed, firstly, to the physical signs; and secondly, to the chief physiological or functional symptoms.

1. The Physical Signs.—The natural sounds of the heart are liable to be modified or changed by disease, causing either sound or both to be accompanied or to be supplanted by a noise which has been aptly compared to the blowing of a pair of bellows; hence it is termed by us a bellows-

murmur, and by the French a *bruit de soufflet*. A bellows-murmur may be harsh, or rough, or cooing, or whistling, or musical, but these modifications are of little importance; of whatever nature, it is caused either by the presence of obstructions which impede the free flow of blood through the heart and its great vessels—producing an organic murmur; or by a supposed peculiar condition of the blood—giving rise to an inorganic murmur. When the valves of the heart are affected so that they act ineffectively, an organic bellows-murmur results.

The lining membrane, valves, and orifices of the left side of the heart are much more frequently diseased than those of the right; so much so, that it is almost a question whether disease of the tricuspid or pulmonary valves can be accurately diagnosed. "Practically, in at least nineteen out of twenty cases," says Dr. Harvey, "the questions to be determined are, whether it be the mitral or the aortic valve that is diseased, or both; and whether the disease be of the nature of valvular obstruction, or of valvular insufficiency, or both."* Diseases of the left side chiefly affect the arterial pulse, giving rise to irregularity and inequality; those of the right side affect the venous circulation, causing regurgitation into the jugular veins—a condition known as the venous pulse. Dropsy is more often connected with disease of the right than the left cavities.

Disease of the *semilunar valves of the aorta* is not uncommon. If the affected valves diminish the aortic orifice during systole—or contraction—so as to prevent the blood from freely flowing out of the ventricle, a systolic bellows-sound will result, which will be best heard at the base of the heart, along the course of the thoracic aorta, up towards the right clavicle, and even in the carotids; the sound diminishing as the stethoscope is moved towards the apex of the heart. If the valves close imperfectly, permitting reflux of blood from the aorta, the morbid sound will be diastolic—will accompany the dilatation of the ventricle. The pulse of aortic regurgitant disease is peculiar, being

* Notes on Chronic Heart Disease.—Medical Association Journal, Sept. 1, 1854.

generally sudden and sharp, and without any prolonged swell of the artery; Dr. Hope calls it a jerking pulse. The short second sound of the heart will also be muffled and indistinct. Sometimes we have both these conditions of the aortic valves in the same case; a double bruit or bellows-sound will then be produced.

The *mitral valve*, which guards the left auriculo-ventricular orifice, may become thickened or ossified, the effect of which is to prevent its closing the auricular orifice during systole, as well as to hinder its lying flat against the walls of the ventricle so as to allow the blood to pass freely out during the diastole. In such cases the orifice is almost rendered a permanent oval slit. A double bruit may perhaps be heard; the first, systolic, caused by the regurgitation of the blood from the ventricle into the auricle; the second, diastolic, and due to the impediment to the passage of the blood from the auricle to the ventricle; it is but rarely heard, however. The murmur or murmurs will be best distinguished towards the apex of the heart, on the left. The pulse will be irregular. Palpation also often discovers a purring thrill.

Dr. Harvey thus briefly tabulates the signs of the disease of the aortic and mitral valves:—

BRUIT:—If *systolic*, and loudest at

Base = AORTIC obstruction.

Apex = MITRAL insufficiency.

BRUIT:—If *diastolic*, and loudest at

Base = AORTIC insufficiency.

Apex = MITRAL obstruction.

PULSE: If *regular*,

Full, or strong,

Jerking, resilient,

} = AORTIC disease.

PULSE: If *irregular*,

Intermittent, unequal,

Soft, small, weak,

} = MITRAL disease.

The *semilunar valves of the pulmonary artery* are very rarely diseased; so rarely, that any organic alteration in

them is a pathological curiosity. When, however, a bellows-murmur can be traced from the middle of the left edge of the sternum up towards the left clavicle, and when this murmur cannot be heard in the subclavian or carotid arteries, we may assume that it originates at the orifice of the pulmonary artery. The pulse will be unaltered.

The *tricuspid valve*, guarding the right auriculo-ventricular opening, is also but seldom found otherwise than healthy. When diseased, the arterial pulse will be unaffected, but there will be turgescence, with pulsation of the jugular veins at every ventricular systole. A bellows-murmur will be heard over the central and lower part of the sternum, extending downwards to the epigastrium, inaudible in the aorta and its branches.

To determine the systolic or diastolic character of a murmur, the pulse at the wrist must be carefully noted during auscultation; if systolic, the bruit must of course be synchronous with the pulse, and if most audible at the apex is indicative of mitral disease; if diastolic, not synchronous with the pulse, and most audible over the centre of the sternum and along the course of the aorta, it is indicative of aortic disease.

2. Physiological and Functional Symptoms.—The following are the chief:—

1. Difficulty of breathing, varying from the slightest dyspnoea to the most severe orthopnoea; much increased on ascending a height or making any exertion.
2. Palpitation and irregular action of the heart, with the sounds and murmurs discoverable by auscultation, &c.
3. Irregular pulse. In mitral disease the pulse is generally soft and irregular; in aortic, hard, jerking, but regular.
4. Congestion of the lungs; bronchitis; pneumonia; pulmonary hemorrhage, with or without pulmonary apoplexy: these symptoms being most urgent in mitral disease.
5. Hemorrhages from the nose, bronchial tubes, or mucous membrane of the stomach.
6. Œdema of the lower and sometimes of the upper extremities, and face; hydrothorax; and ascites. Dropsy is more common in disease of the right cavities of the heart than in affections of the left.
7. Cephalalgia, *tinnitus aurium*, vertigo, syncope, cerebral congestion, and

cerebral hemorrhage, most urgent in aortic disease. 8. Broken rest, with startings during sleep, and frightful dreams. 9. Enlargement of the liver and spleen, with disorder of the digestive organs generally. 10. A peculiar appearance of the countenance, wherein the face is puffed, the cheeks flushed and of a purple hue, the lips congested, and the eyes bright.

As time advances, the heart disease generally becomes more aggravated: the patient becomes weak, and suffers immediately from over-exertion, mental emotion, improper food, or exposure to wet and cold; and subsequently death ensues, either suddenly from syncope, or gradually from the progress of one or other of the secondary affections. The latter termination is the most common.

Treatment.—In the treatment of the valvular diseases of the heart three indications have generally to be followed: 1st. To abate inordinate action of the heart by sedatives, as digitalis, hydrocyanic acid, and morphia; 2d. To ward off or gradually relieve the results of the cardiac disease, such as pulmonary congestion, pneumonia, hemorrhage, congestion of the liver and kidneys, dropsy, &c., by a nutritious diet, and by maintaining the various secreting organs in a healthy state; and 3d. To endeavor to give strength and tone to the heart, so as to assist it to do its work, by nourishing food, a duly regulated supply of stimulants, breathing pure air, warm clothing, early hours, avoidance of all bodily and mental excitement, and by the administration of tonics—especially the various preparations of steel.

19. HYPERTROPHY OF THE HEART.

The heart is stated roughly to be about the same size as the closed fist; its mean weight is between eight and ten ounces.* The muscular walls of one or more of the cavi-

* The weight of the healthy heart in persons from twenty to fifty-five years of age averages, in males, 9 oz. 8 dr., and in females 8 oz. 13 dr. Estimates of this description are of course, to a certain extent, arbitrary; for as the heart is found, in some cases, to be considerably above its ordinary weight, without the

ties of the heart may become thickened without any diminution in the size of the chamber; this is called *simple hypertrophy*. Or, as most frequently happens, the walls may be thickened and the chamber become larger than natural; this is *eccentric hypertrophy*. On the other hand, the increase in thickness may be accompanied with diminution in the size of the cavity; this is known as *concentric hypertrophy*.

The *cause* of the hypertrophy is usually some obstruction either to the flow of blood through the heart, or to the free play of this organ; hence it is frequently a provision of Nature to counterbalance the impediment. The heart is stimulated to extra exertion, and in consequence receives an extra supply of nutritive materials, by which its muscular structure is strengthened. The *symptoms* will depend upon the extent of the hypertrophy; frequently they consist of palpitation, dyspnoea, difficulty of walking quickly, uneasiness and pain in the cardiac region, headache, and frequent attacks of vertigo. If we listen to the heart's movements we shall find the systolic sound less distinct than in health; but we shall also feel that the extent of the pulsation beyond the præcordial region, and especially the degree of impulse against the walls of the chest, are both much increased. Moreover, when there is valvular disease, the morbid sounds indicative of such will be present.

The *treatment* must consist in keeping the patient as quiet as possible, and in prescribing for his symptoms. If there be much debility, steel may be given (F. 345, 350, 354); if the heart's impulse be very great, digitalis (F. 284, 285) may be occasionally, but cautiously, tried; when the dyspnoea is urgent, stimulants, especially ammonia and sulphuric ether (F. 88) may be had recourse to. Dr. Hope observes that the art of treating hypertrophy consists in keeping the patient rather low, and the circulation tranquil, short of producing anæmia or debility.

proportion of its walls and cavities being materially altered, or the organ being otherwise diseased, it is not easy to say at what point it ceases to be healthy.—Dr. Peacock, *Edinburgh Monthly Journal*, September, 1854.

SIMPLE HYPERTROPHY OF THE LEFT VENTRICLE WITH NO OBSTRUCTION TO THE FLOW OF BLOOD.—This condition is rare. On ausculting the heart the systolic sound is less loud and clear than natural, but no bellows-murmur is heard. On placing the hand over the præcordial region the impulse of the heart will be found increased.

HYPERTROPHY OF LEFT VENTRICLE WITH VALVULAR DISEASE.—This is the most common form of hypertrophy. The chief causes are—"Defective aortic valves, permitting regurgitation of the blood into the left ventricle during its diastole; constriction of the aortic orifice, impeding the free passage of the blood from the left ventricle during its systole; deficiency of the aortic valves, associated with constriction of the aortic orifice; defective mitral valves, permitting regurgitation of the blood from the left ventricle into the left auricle—all these abnormal conditions occasioning impediments to the circulation of the blood through the heart, and their immediate effects, are communicated directly to the left side, and indirectly to the right side of the heart."* As the hypertrophy in these cases is an endeavor—so to speak—towards health, the increased power compensating for the obstruction to the flow of blood caused by the valvular disease, we must not unnecessarily interfere with the symptoms.

20. ATROPHY OF THE HEART.

There are two forms of atrophy of the heart; one, in which the organ simply wastes and dwindles in all its parts; the other, in which the texture of the muscle suffers a sort of conversion into fat—becomes affected with fatty degeneration.

Fatty degeneration of the heart is a most interesting disease, for a full knowledge of which the student must refer to the writings of Drs. Quain and Ormerod, and Messrs. Paget and Barlow. It occurs under two circumstances; either alone, or in conjunction with fatty disease of the other organs, as the kidneys, liver, cornea, &c. Its *diag-*

* Dr. Markham, *Opus cit.*, p. 256.

nosia is beset with difficulties, and when existing alone it is frequently not suspected until after death, and after a microscopic examination of some of the muscular fibres of the heart. The most prominent symptoms are feeble action of the heart, remarkably slow pulse—sometimes as low as fifty or forty-five—general debility, and a feeling of nervous exhaustion, loss of tone, &c. When in addition there is well-marked arcus senilis—due, as Mr. Canton has shown, to fatty degeneration of the edge of the cornea, and when well developed seldom existing alone—the diagnosis is facilitated. This disease occurs at all ages, but principally at advanced periods of life; all classes of society may suffer from it: it may exist singly, or with other cardiac diseases: and it is not an uncommon cause of sudden death. “On opening a heart thus affected,” says Dr. Ormerod, “the interior of the ventricles appears to be mottled over with buff-colored spots of a singular zigzag form. The same may be noticed beneath the pericardium also; and in extreme cases the same appearance is found, on section, to pervade the whole thickness of the walls of the ventricle and of the *cornæ columnæ*.” On microscopically examining these spots, their nature is revealed; they are not deposits, but degenerated muscular fibres. Instead of seeing transverse striæ and nuclei, the evidences of a healthy state—little can be distinguished but a congeries of oil-globules. The muscular fibres are also found to be short and brittle; and Dr. Quain has pointed out that the coronary arteries are often obstructed. Mr. Paget well remarks that “the principal characters which all these cases seem to present is, that they who labor under this disease are fit enough for all the ordinary events of calm and quiet life, but are wholly unable to resist the storm of a sickness, an accident, or an operation.” Sometimes fatty degeneration of the muscular tissue is associated with a morbid accumulation of fat upon the surface of the heart—*fatty growth*: though either fatty degeneration or fatty growth may exist singly. The symptoms of fatty growth, when it exists alone, are those of a heart impeded in the performance of its functions.

In the present state of our knowledge, the treatment of a case of suspected fatty disease of the heart resolves itself

chiefly into preventing further degeneration of tissue. The means to adopt therefore are—good nourishing food, attention to the digestive organs, pure air, early hours, gentle exercise, and the use of ferruginous tonics. Soda water will prove useful as a drink; a little brandy or sherry may be given with it. The patient should use daily a salt water sponging bath. Some authors object to the use of fat meats, of milk, and indeed of all oleaginous foods. But it is difficult to understand the ground on which these restrictions are recommended; since the disease is a degeneration of tissue, caused by debility or a wearing out of the frame, rather than by an excess of power. Hence I believe that cod-liver oil, cream, and milk, may generally be given with great advantage.

21. CYANOSIS.

Cyanosis, *morbus cæruleus*, or blue disease, are terms applied to a condition characterized by blue or purplish discoloration of the skin; arising generally from some malformation of the heart, permitting direct communication between the right and left cavities.

The chief malformations are—permanence of the foramen ovale; abnormal apertures in some part of the septum of the auricles or of the ventricles; origin of the aorta and pulmonary artery from both ventricles simultaneously; extreme contraction of the pulmonary artery; or, lastly, continued patency of the ductus arteriosus.

In addition to the discoloration of the skin the patients who survive their birth suffer from coldness of the body, palpitation, fits of dyspnoea, syncope on the least excitement, and dropsical effusions.

The *treatment* must be simply palliative, the organic cause being irremediable.

22. RUPTURE OF THE HEART.

Rupture of the heart may occur spontaneously from previous disease, or it may be caused by external violence. The rupture occurs most frequently in the ventricles, especially the left; but all parts of the heart are liable to it.

Of the morbid conditions which are likely to give rise to it, ulceration of the inner membrane, resulting from carditis or endocarditis, is the most common. Weakening of the muscular tissue from fatty degeneration, partial aneurism of the heart, or the continued pressure of any tumour upon this organ, may also predispose to it.

It occurs more frequently in males than females; it is rare till after the fiftieth or sixtieth year. In the majority of cases, rupture of the heart kills instantaneously. A patient has been known to survive some hours, however, the wound having become plugged by coagula, so that the extravasation of blood into the pericardium took place slowly and gradually.

23. ANGINA PECTORIS.

This is a paroxysmal disease, first described by Dr. Heberden,* who called it a *disorder of the breast*; remarking that "the seat of it and the sense of strangling and anxiety with which it is attended, may make it not improperly be called *angina pectoris*." "Those who are afflicted with it," he continues, "are seized whilst they are walking, and more particularly when they walk soon after eating, with a painful and most disagreeable sensation in the breast, which seems as if it would take their life away if it were to increase or to continue. The moment they stand still all this uneasiness vanishes. In all other respects the patients are, at the beginning of this disorder, perfectly well; and in particular have no shortness of breath, from which it is totally different."

The duration of the seizure rarely exceeds a few minutes, though it may last for half an hour, or an hour, or even longer. The attacks occur at uncertain intervals of weeks or months; in confirmed cases the periods of recurrence approximate more and more with each successive paroxysm. The seizure may come on at any time, not only when the patient is walking, but even when in bed. The pain is most severe, and is attended with a feeling as if life were

* *Transactions of the College of Physicians*, vol. ii.

about to cease; in some cases the paroxysm has at once destroyed life. Consequently the *prognosis* is very unfavorable; for if death do not occur in the first or second seizure, it generally does so in some subsequent attack. The disease occurs most frequently in advanced life, and is much more common in men than in women. In some few instances it has seemed to have some connection with gout; and I have read of gout and angina pectoris alternating with each other in the same individual. But our knowledge is too small at present to make any opinion on this subject of the least value.

Sir John Forbes has collected the histories of forty-five cases of angina pectoris, in which the body was examined after death. In two of the cases there was disease of the liver only; in four there was nothing morbid except an excessive coating of fat about the heart; while in the remaining thirty-nine there was found organic disease of the heart or great vessels. Of these latter cases, in ten there was organic disease of the heart alone; in three of the aorta alone; in one of the coronary arteries alone. But there was ossification, or cartilaginous thickening of the coronary arteries, combined with other disease, in sixteen instances; and there was disease of the valves of the heart in sixteen cases likewise. The aorta was diseased in twenty-four cases, and in twelve there was preternatural softness of the heart.

The *treatment* during a paroxysm consists in the administration of stimulants, as wine and brandy; and of antispasmodics, such as ether, opium, chloroform, hydrocyanic acid, &c. I have found Formula 78 exceedingly valuable. The patient should keep the medicine by him, in order that it may be taken on the least threatening of an attack. A belladonna plaster worn constantly over the præcordial region may do good.

The return of the seizure is to be guarded against by improving the general health; by great attention to diet; and by the avoidance of stimulants, strong exercise, and all mental excitement.

24. ANEURISM OF THE HEART.

Aneurism of the heart occurs in two forms; either there is simply dilatation of the wall of a ventricle, forming the improperly called *passive aneurism* of Corvisart; or a pouched fulness arises abruptly from the ventricle, constituting a tumor on the heart's surface. The sac often contains laminated coagula of blood, especially when its mouth is constricted.

The *symptoms* are uncertain and obscure. Death may result from rupture into the pericardium, or, if the pericardium be adherent to the heart, as it mostly is in these cases, into the pleura.

Aneurism of the coronary arteries sometimes occurs. I know of no signs on which the physician can rely for its detection.

SECTION V.

DISEASES OF THE ORGANS OF DIGESTION.

1. GLOSSITIS.

GLOSSITIS, or inflammation of the substance of the tongue, is generally met with as an accompaniment of other diseases, rather than as an idiopathic affection. When it arises idiopathically, glossitis gives rise to fever, mental depression, and general weakness. In all cases the local symptoms are the same, consisting chiefly of pain, heat, and swelling; the tongue is found of a deeper red color than usual; and occasionally the swelling proceeds to such an extent that the cavity of the mouth is not large enough to contain the organ, and it projects out beyond the teeth. This condition, which often occurs very rapidly—sometimes in a few hours—is attended with urgent dyspnoea, and requires prompt treatment. Active purgatives should be administered by means of enemata; the vapor of hot water should be perseveringly applied to the tongue itself; and, if necessary, incisions must be made to relieve the tension, or to let out the pus if the morbid action has gone on to suppuration. If suffocation be threatened, owing to the enlargement of the root of the tongue, tracheotomy ought to be performed. Mr. Benjamin Bell saved a patient's life by this operation, in a case of glossitis produced by the use of mercury.

2. GANGRÆNA ORIS.

Gangræna oris, or cancrum oris, or sloughing phagedæna of the mouth, occurs in children of debilitated habits, between the ages of two years and five. The *symptoms* are generally these: The child is out of health, and evidently

weak; and on one cheek is a hard indolent swelling. On examining the cavity of the mouth, a whitish or ash-colored eschar is seen in the centre of the cheek; which gradually increases until the slough has spread over the whole of the interior of the cheek, lips, and gums. The saliva is copious, and horribly fetid. There is great constitutional disturbance, and the disease frequently ends fatally. It has often been unjustly attributed to the action of mercury; it may occur when not a particle of this medicine has been given.

The *treatment* must consist in the application of the nitrate of silver—in some instances, of the strong nitric acid—to the slough; in frequently syringing the mouth with solutions of chloride of zinc or of chlorinated soda (F. 76, 242); and in the free administration of strong beef-tea, wine, or brandy, and the chlorate of potash in decoction of bark.*

3. APHTHÆ.

Aphthæ consists of small round white specks or patches, scattered over the tongue and lining membrane of the mouth. They form a special disease in infancy—the *thrush*; in adult age they are apt to rise in the course of other diseases, when they are often the harbingers of death. In some forms of this disease, microscopical parasitic plants—the *Leptothrix buccalis* and the *Oidium albicans*—are said to be developed in large quantity; and are, in fact, the cause of the disease. The *treatment* of the thrush consists in the use of alteratives and tonics (F. 31, 341, 342, 343),

* From the effects of this agent in numerous cases Mr. Hutchinson concludes: 1. That chlorate of potash possesses a peculiar influence over all inflammatory affections of the mouth, the syphilitic perhaps excepted. 2. That it possesses a peculiar influence over inflammations attended with phagedæna or sloughing, on whatever part of the body situated. He recommends five grains as a fair ordinary dose for infants of one year, while for those older it should be proportionately increased—a scruple or half a drachm being the quantity for an adult.—*Medical Times and Gazette*, August 23, 1856.

and the application of the mel boracis to the aphthous parts.

Dr. Jenner states that in cases attended with the formation of parasitic plants, the application of a solution of sulphite of soda (3j to water 3j) suffices to remove the disease from the mucous membrane of the mouth in twenty-four hours. The secretions of the month being acid, the salt is decomposed, and sulphurous acid is set free, which at once destroys the parasite.

4. CYNANCHE PAROTIDÆA.

Cynanche parotidæa, or parotitis, or the mumps, is a specific contagious inflammatory affection of the salivary glands, and of the parotid gland especially. It first manifests itself by slight febrile disturbance, with tumefaction and soreness in one or both parotid regions, the swelling extending from beneath the ear, along the neck to the chin, and involving the submaxillary glands. The disease reaches its height in four days, and then declines. Occasionally, during or after the decline, the testicles or mammæ become painful and swollen.

The *treatment*—when any is necessary—consists in the employment of gentle laxatives, mild diaphoretics, and hot fomentations, or merely flannel, to the throat.

5. CYNANCHE TONSILLARIS.

Cynanche tonsillaris, or tonsillitis, or quinsy, or common inflammatory sore throat, manifests itself by smart fever, redness and swelling of the fauces and tonsils, and difficulty of deglutition; together with—in severe cases—pain shooting from the throat to the ear, along the course of the Eustachian tube. Dyspnœa is but rarely present. Under ordinary circumstances, the inflammation runs a certain course, and terminates by resolution in a few days, merely leaving the tonsils enlarged; when violent and prolonged, however, it frequently leads to suppuration in one or both tonsils. Rigors often announce the suppuration, and the

pain is very severe until the abscess bursts, or is opened artificially.

The principal exciting cause of quinsy is cold. The liability to it is increased by repetitions of the attacks. It is doubtful whether it be contagious or not; but most practitioners assert that it is not.

The *treatment* required is usually very simple. A few doses of some cooling saline purgative, and hot fomentations or linseed-meal poultices to the throat, will be all that is necessary. The steam of hot water applied to the fauces gives great relief. Blistering the outside of the throat, or the application of stimulating embrocations—as the compound camphor liniment, will be useful in some obstinate cases. Guaiacum in large doses has been recommended as a specific in quinsy, but I have never found it of much service.

6. DISEASES OF THE ŒSOPHAGUS.

The Œsophagus is not often subject to disease. Occasionally, however, this canal becomes the seat of *stricture*, the result usually of injury, from swallowing the strong mineral acids or caustic alkalies. I have seen only one instance in which inflammation and ulceration occurred, followed by stricture, without any appreciable cause.

Dr. Basham has recorded* a very interesting example of stricture of the Œsophagus, arising in a young woman, twenty-two years of age, from the accidental swallowing of a very small quantity of soap-lees (a caustic solution of impure carbonate of soda). When admitted into the Westminster Hospital, five days after the accident, she was suffering chiefly from vomiting; which was relieved by calomel and opium, oleaginous laxatives and demulcents, milk and farinaceous diet, and by a blister to the throat and upper part of the sternum. An Œsophagus tube passed easily. Ten days after her admission she was discharged apparently well. At the end of eleven months she was again admitted, suffering from urgent dysphagia. She appeared half-starved,

* *Medico-Chirurgical Transactions*, vol. xxxiii. p. 33. London, 1850.

and stated that for many weeks she had taken no solid food; and that lately the difficulty of swallowing had become so great that she could hardly take liquid nourishment. A small gum-elastic catheter, No. 8, was passed with a little difficulty, and beef-tea was injected into the stomach, to the great relief of the patient. This plan of treatment was continued, a larger tube being gradually used, and in a little more than twenty days she was so much improved that she was able to swallow freely, and was therefore made an out-patient. She neglected to attend, however, and consequently eighteen days afterwards was readmitted with her former symptoms aggravated. The same treatment was again successfully resorted to, and she was kept under longer observation by employing her as an hospital nurse. She was afterwards lost sight of for a time; but in about eight months—or twenty-six from the accident—she again, for the fourth time, applied, and was admitted. Only the smallest bougies could now be passed; nutritious enemata were employed; but in a few days she died, literally of starvation.

In the management of these cases we can only trust to the repeated use of the bougies, to prevent the stricture from closing. In hopeless examples, it has been suggested to make an incision into the stomach, large enough to enable us to introduce food. The well-known case of Alexis St. Martin seems to show that such treatment *might* be successful in a case otherwise hopeless.

The œsophagus may, like the urethra and bronchial tubes, suffer from *spasmodic* stricture. Young hysterical women are often affected with it; the principal symptoms consisting of difficulty in swallowing, an occasional sense of fullness and choking, with anæmia, &c. It may generally be readily relieved by antispasmodics (F. 79, 81, 83), and by the daily use of the cold shower bath, &c.

7. DYSPEPSIA.

Dyspepsia, or indigestion, is one of the most common diseases we have to treat. Anything which interferes with the *healthy action* of the stomach will give rise to it.

Causes.—The most frequent cause of dyspepsia is the use of food in too large a quantity, or of an improper nature; or the imperfect mastication of food. Want of exercise, excessive labor, mental anxiety, general debility, and disease of the stomach, liver, or pancreas will also give rise to it. So, when the blood is rendered impure from any morbid poison in the system, as that of fever, cholera, &c., we have indigestion. It is common in Bright's disease, when the blood is contaminated with retained urea, owing to the imperfect action of the kidneys. Dr. Beaumont clearly proved, in his well-known experiments on Alexis St. Martin, that spirituous liquors were most injurious to the stomach; hence persons in the habit of using them often suffer from indigestion. Another common cause is an error frequently committed, of not allowing a sufficient interval between the meals, to permit of the stomach doing its work and resting: for Abernethy's rule, that six hours at least should intervene between each meal, cannot be long broken with impunity.

Symptoms.—The symptoms vary, but the most constant are anorexia or loss of appetite; a sensation of pain, weight, and fulness at the epigastrium; flatulence, or the undue collection of gas in the intestinal canal; nausea and vomiting; costiveness; furred tongue; foulness of breath; palpitation of the heart; pain in the loins; aching of the limbs; dull headache; and hypochondriasis. Occasionally the patient complains of CARDIALGIA, or heart-burn; or of GASTRODYNIA, or cramp in the stomach; or of the frequent eructation of a thin, watery, acid, or tasteless fluid, constituting what is termed PYROSIS, or the waterbrash. Pyrosis occurs more frequently in women than men, is not uncommon in advanced life, and often exists in connection with some derangement of the nervous system, or—in some instances—with organic disease of the stomach, pancreas, or liver.

Diagnosis.—The difficulty of diagnosing correctly the various morbid affections of the stomach is by no means slight; since not only are we for the most part ignorant of any direct means of ascertaining the physical condition of this viscus during life, but the prominent symptoms of

many of its different diseases are almost identically the same. Thus we find *pain and soreness at the epigastrium* not only common to most of the organic affections of the stomach—as to cancer, simple ulcer, and inflammation of the mucous membrane; but also to many of the merely functional derangements, being generally present in the sympathetic vomiting of phthisis and in that of many diseases of distant organs. The diagnosis may, however, be assisted by remembering that when the pain depends upon organic disease, it is generally most severe soon after taking food, especially if this be heavy and indigestible; while, when it is due to functional disorder only, it is often relieved by food. This last fact has been explained on the supposition that the uneasiness is mainly due to an unhealthy condition of the gastric secretions; which of course act the less violently the more they are diluted. In ulcer of the stomach, pain is usually constantly present, being merely aggravated by food; in cancer, it is of a dull aching character, is most acute after meals, and continues severe while the stomach is full; while the pain of simple indigestion—the remorse of a guilty stomach, as it has been facetiously called—only requires abstinence for its alleviation. Another important symptom—*vomiting*—may be produced by a greater number of circumstances than those which give rise to pain; as, for example, by organic disease of the stomach; by mechanical obstruction of any part of the alimentary canal; by irritation in distant organs, as the brain, uterus, &c.; and by morbid states of the blood. When due to organic disease, it generally co-exists with pain, and may be diminished by eating very light food, by taking but little at a time, by counter-irritation to the epigastrium, and often by bismuth. In the vomiting from mechanical obstruction of any part of the alimentary canal, we learn much by noting the time of its occurrence, the nature of the vomited matters, and the extent and urgency of the general symptoms. Thus in stricture of the pylorus, the vomiting only takes place when the stomach is full and distended, so that the matters brought up are large in quantity. When the constriction is in the small or large intestines, the contents of the bowel are returned into the

stomach by an antiperistaltic motion, and then rejected. In the sickness from irritation in a distant organ, or in that caused by an unhealthy state of the blood, there is usually a constant and very depressing feeling of nausea, but no pain; flatulence is also often complained of, and there is often disordered action of the bowels. This leads me to speak of a third general symptom of functional and organic diseases of the stomach, which is often very annoying, and not always easily relieved—viz., *flatulence*, or the undue collection of gas in the intestinal canal. It may arise from one or more of the following causes—*i. e.*, from air swallowed, from gas generated by decomposition of the contents of the stomach or bowels, or from gas secreted by the mucous membrane of the intestinal canal. In the first instance, the air is thrown up by eructation, and is nearly odorless and tasteless; in the second, the gases are passed upwards or downwards, are very fetid, and often accompanied by nausea, griping sensations, tenesmus, &c.; while in the third case the gas is generally expelled *per anum*, and has the odor of healthy feces. Pyrosis or waterbrash, voracious appetite, depraved appetite, sick-headache, &c., are all symptoms of different varieties of dyspepsia, dependent upon various causes, and requiring special treatment.

Treatment.—Abernethy used to say that no person could be persuaded to pay due attention to his digestive organs until death, or the dread of death, was staring him in the face. Without either subscribing to or denying the truth of this dogma, it is certainly fortunate that of all the organs of the body, the stomach is that on which we can exert the most powerful action, both indirectly and directly. Daily observation has taught us all how thoroughly digestion is improved by those means which invigorate the system generally, as by rest and early hours, relaxation from severe studies, or from the harassing cares and anxieties of business, change of air, sea-bathing, cold or tepid sponging, horse exercise, the disuse of tobacco and of alcoholic stimulants where these have been too *freely indulged in*, and so on.

The regulation of the diet alone will often effect a cure.

Thus, in severe cases we can give the stomach rest for twelve or twenty-four hours; or even time by resorting to nutrient enemata. The plainest food should be allowed, and only soup should be taken at a meal; milk and lime-water, gruel, sago, and arrowroot will all be useful. As we find these articles can be taken without causing any pain or uneasiness, we may increase the diet, and white-fish, poultry, and mutton may be ordered. Stale or unfermented bread may be eaten; but vegetables, pastry, cheese, beer, and spirits should be forbidden. If any stimulant be needed, a little sherry or weak brandy and water will prove the least injurious, and in some instances will be even beneficial.

With regard to medicines, several are useful. Perhaps the first which ought to be mentioned is pepsine, the digestive principle of the gastric juice; so valuable when there is an imperfect performance of the functions of the stomach, and especially when this is indicated by disturbance following the use of animal food. It should be given in doses of fifteen grains with the two chief meals of the day; in some instances an advantage seems to be gained by the simultaneous use of a small additional quantity of lactic acid. When the pepsine alone fails to relieve the pain of indigestion, about the one-seventh of a grain of the hydrochlorate of morphia should be combined with each dose; or when great atony prevails, the one-twenty-fourth of a grain of strychnia may be employed in the same way.* There are also other agents which increase the gastric secretions, such as rhubarb, ipecacuanha, and

* For the introduction of pepsine into practice we are chiefly indebted to M. Corvisart, and to Dr. Ballard for promulgating this physician's views in this country. Pepsine is prepared by treating the mucous membrane of the rennet bag—the fourth stomach of the ruminants—with distilled water, precipitating the pepsine by acetate of lead, and decomposing this precipitate by sulphuretted hydrogen. The solution of nearly pure pepsine thus obtained is evaporated to the consistence of a syrup, and then mixed with starch in such proportion that fifteen grains of the mixture shall be capable of digesting one drachm of dried fibrin.

ginger; the first being often especially useful. If we wish to restrain undue secretion we resort to bismuth, opium, or hydrocyanic acid; if to relieve pain and vomiting, we may use ice, morphia, and carbonic acid, by means of effervescing draughts; if there be an excessive secretion of acid, we order alkalies; and if we desire to give tone to the digestive organs, we administer carminatives, followed by mild tonics, and one or other of the various preparations of steel.

With regard to the use of wine and beer to prevent dyspepsia, it may be said that they are often very beneficial. It is no doubt true that the stomach, which requires stimulants to enable it to act efficiently, can hardly be said to be in a healthy state; but, at the same time, we must remember that the battle of life is not waged without much wear and tear, without almost overwhelming anxieties and sickening disappointments, and that the digestive organs are the first to sympathize with the depressions of the mind, no less than with the fatigues of the body.

8. HÆMATEMESIS.

Hæmatemesis, signifying strictly vomiting of blood, is generally employed to denote hemorrhage from the stomach. The blood is usually vomited in large quantities; is not frothy, and is of a dark color, from admixture with the hydrochloric acid of the gastric juice (all acids blacken the blood). Hence it presents marked differences from the blood in hæmoptysis; in which disease the hemorrhage is generally preceded by cough, dyspnoea, tickling in the throat, and a peculiar sensation in the thorax; while the blood is brought up by coughing in mouthfuls at a time, is of a florid red color, and is mixed with a little frothy mucus.

Hæmatemesis may perhaps take place by exhalation, that is to say, by oozing through the mucous membrane; or it may be caused by the opening of a bloodvessel by ulceration. It may arise without any appreciable cause; or it may be vicarious of some other hemorrhage, especially of the catamenia; or it may result from changes in

the blood itself, as in scurvy; or it may be owing to congestion of the stomach from some impediment to the free passage of the blood, such impediment being due to disease of the heart, liver, &c. When it results from disease of the liver, there is generally intestinal hemorrhage also, and blood is then passed by stool, causing the evacuations to resemble tar; this condition is known as *melæna*. *Hæmatemesis* is generally preceded by a feeling of oppression and weight; by dull pain in the epigastric and in the hypochondriac regions, as well as by a sense of anxiety and faintness. Directly the blood flows into the stomach it seems to act as an emetic, and vomiting results; generally, also, some of it passes downwards into the intestines, and comes away in the evacuations.

The *treatment* must consist in enjoining abstinence from food, perfect rest, and the horizontal posture; cold acidulous drinks, ice, and gallic acid (F. 97) may also be prescribed. The oil of turpentine (F. 95, 96) is thought by some to be a specific. In cases of *melæna*, active purging will be necessary; a full dose of calomel should be given, followed by the common black draught (F. 132).

9. GASTRITIS. •

Gastritis, or inflammation of the mucous membrane of the stomach, may be acute or chronic.

ACUTE GASTRITIS—arising idiopathically—is a very rare disease; it is, however, a frequent result of poisoning by any of the irritants, as by the mineral and vegetable acids, caustic alkalies, arsenic, &c.

Symptoms.—These consist of burning pain in the epigastrium, aggravated by the slightest pressure; great thirst, with a constant desire for cold drinks, which are vomited as soon as taken; dyspnœa; constant distressing nausea; and extreme prostration, denoted particularly by faintness, feebleness of the pulse, great pallor, cold clammy extremities, and great anxiety of countenance. When the inflammation continues, the tongue becomes red, glazed, and smoothed, unless it has been injured by the action of the poison; the bowels are constipated; the urine is scanty

and high colored ; there is great restlessness and hiccup ; and the prostration increases, till death takes place from exhaustion. These symptoms are not present in all cases ; the immediate effects of severe injury to the stomach being sometimes comparatively slight. When the Eddystone Lighthouse was destroyed by fire in 1755, one of the keepers was burnt by the fall of the molten lead. The man asserted that some of the lead had passed down his throat ; but as he had gone through much fatigue after the accident, and had begun to amend at the sixth day, his statement was not credited. However, on the eleventh day, he rapidly grew worse and died ; when, on examining the body, a piece of lead, weighing more than seven ounces, was removed from the stomach.

Morbid Anatomy.—The morbid appearances usually found are redness, softening, sloughing, and, when one of the powerful escharotics has been taken, perforation. Redness alone is by no means evidence of the previous existence of inflammation, since it may be produced after death by gravitation of the blood to the most dependent parts ; when death occurs, too, from any cause during the process of digestion, the stomach will be found red. So also with softening and perforation ; we must remember that these may occur from the *post-mortem* action of the gastric juice—from the stomach actually digesting its own tissues—as was first pointed out by John Hunter. Cadaveric softening of the stomach is not uncommonly found when death has occurred suddenly from an accident, soon after a meal, and when the body has been kept in a warm situation.

Treatment.—The treatment of acute gastritis will depend, in a great measure, upon the cause. In most cases I should rely on purgative enemata at the onset, followed by opium, the sucking of Wenham Lake ice, which will frequently relieve the vomiting, as well as lessen the inflammation ; and perhaps I might allow a very little cold arrowroot or gruel. It will be better to nourish the patient, however, by nutritious enemata (F. 17, 18), than by food given by the mouth. In some instances fomentations applied to the epigastrium give much relief. When any of the corrosive poisons have been taken, emetics will very

rarely be necessary, since these agents themselves induce severe vomiting; the stomach-pump should never be used. During convalescence great care will be required in regulating the diet, farinaceous substances and broths being chiefly allowed, and only in small quantities at a time.

CHRONIC GASTRITIS.—This form of inflammation is much more common than the preceding, and fortunately much milder.

The *causes* are numerous. There is no doubt that it may be brought on by excess in eating or drinking; for Dr. Beaumont frequently witnessed this result in Alexis St. Martin, who, in consequence of a gun-shot wound, had a permanent fistulous opening through the abdominal parietes into the stomach, thus affording an opportunity of watching the process of digestion. Under the continued use of improper food, the inflammation always became aggravated; whereas under the influence of low diet and cooling drinks the stomach rapidly recovered. Long continued abstinence is a cause of chronic gastritis; as has been proved in experiments upon dogs and other animals when deprived of food. So also this disease sometimes arises during the progress of inflammation and febrile diseases; arsenic, in whatever way it may be introduced into the system, will produce it; sometimes the poison of gout in the blood seems to give rise to it; and, lastly, it may be due to some narrowing of the pylorus impeding the passage of food into the intestines.

The chief *symptoms* are tenderness at the epigastrium, pain and vomiting after meals, slowness of digestion, disordered bowels, and a furred tongue.

In the *treatment*, attention must be paid to the rules laid down in the remarks on Dyspepsia. In many cases low diet and cold water will thoroughly cure the disease.

10. ULCER OF THE STOMACH.

This is an interesting disease, variously spoken of by authors as the *simple*, *chronic*, or *perforating* ulcer of the stomach.

The pathology, symptoms, and treatment of this affec-

tion have been especially investigated by Dr. Brinton ; and from his valuable monograph many of my observations are taken.*

Among the 4000 cases of different diseases which come under Dr. Brinton's care annually at the Royal Free Hospital, he calculates that there are at least 40 examples of ulcer of the stomach. The ulcer is more frequent in the female than the male, in the proportion of nearly two to one. It is specially a disease of middle and advancing life, hardly ever occurring before puberty ; it is more frequent in the poor than in the rich. The ulcer is rarely smaller than a four-penny piece, or larger than a crown piece ; its shape is usually circular or slightly oval ; it is much more frequently found on the posterior surface, the lesser curvature, or the pyloric pouch, than on the anterior surface, the greater curvature, or the cardiac sac ; and two or more ulcers are frequently present in the same stomach. About half the instances of this disease undergo what is probably a spontaneous cure ; in exceptional cases the ulcer has been fatal in ten days, generally by perforation, sometimes by exhaustion, caused or hastened by vomiting, and very rarely by hemorrhage ; in the majority of fatal instances, a period of several weeks or months precedes death. Perforation, however, is an exceptional occurrence in gastric ulcer ; when it occurs, the ulcer has generally been found on the anterior surface of the stomach. When perforation does take place, the contents of the stomach are generally poured into the abdominal cavity, and give rise to fatal peritonitis. But in some very few instances the effusion—owing to the presence of adhesions, &c.—is confined to the neighborhood of the perforated spot ; so that circumscribed peritonitis is set up, suppuration takes place, and a kind of chronic abscess is formed. This may prove fatal in many ways, as, *e. g.*, by discharging its contents through the diaphragm into the thorax ; or, more fortunately, it may open externally through the abdominal walls. In the latter case a gastric fistula is established, which may remain open like that of Alexis St. Martin, or may

* *On Ulcer of the Stomach.* London, 1857.

gradually close and permit of complete recovery. Dr. Brinton conjectures that of every 100 ulcers of the stomach, 50 may cicatrize, $13\frac{1}{2}$ perforate its walls, $3\frac{1}{2}$ corrode its larger vessels, and 2 or 3 kill by the sheer exhaustion and inanition they involve. There is still a proportion of about 30 ulcers in every 100 left quite unaccounted for.

The *symptoms* are liable to some variety, and hence the discrepancies which are to be found in the descriptions of different observers. The most constant symptom is pain in the back over the lower dorsal vertebræ, and in the epigastrium. With respect to the latter, it is often referred to a small spot just below the ensiform cartilage; it is frequently described as dull and sickening, and it is increased by food. Sometimes the pain is associated with violent pulsations, and in some few young women it has been apparently increased by the access of menstruation. There is occasionally eructation of a sour fluid, and at times nausea and vomiting. The patient generally loses flesh, but otherwise the constitutional symptoms are slight; with this exception, that in young females amenorrhœa is often produced. After the disease has continued a longer or a shorter period, perforation may occur; or failing this, there may be a severe attack of hemorrhage. But in favorable cases the ulcer gradually heals, the pains diminish, and the patient completely recovers.

Perforating ulcer of the duodenum presents many of the symptoms of an ulcer in the stomach, but in a mitigated form. Consequently fatal perforation sometimes takes place suddenly, when the patient has previously made but little complaint. A curious observation has been made by Mr. Curling, that a sloughing ulcer sometimes forms in the upper part of the duodenum within a few days after a severe burn, and doubtless in consequence of it: but further investigation is required to confirm the statement. The ulcer may destroy life by hemorrhage or by perforation.

In the *treatment* of ulcer of the stomach we have chiefly to support the system, and to facilitate the cicatrization of the ulcer. When the pain is very severe, hot fomentations, sinapisms, and turpentine stupes applied over the epigastrium, give relief; in obstinate vomiting, or in hemorrhage,

the application of ice is more advisable. Opium may often be administered with very great advantage: bismuth is also a good sedative, and may be given in ten-grain doses, thrice daily, mixed with five or ten grains of compound kino powder: when there is much flatulent nausea, Dr. Brinton recommends the iodide of potassium with calumba (F. 32): when there is troublesome vomiting, hydrocyanic acid in an effervescing draught (F. 329) gives relief: and when there is but little pain or nausea some mild preparation of steel (F. 345, 354, 367) will prove very valuable. Any of these remedies, however, will be almost worse than useless, unless great attention is paid to the nature of the food, and the quantity taken at each meal. In the commencement it will be better merely to allow farinaceous substances—as a little oatmeal or arrowroot—with milk; taking care that only a small quantity be used at a time. Should this even be rejected by the stomach, this viscus should be allowed a complete rest, nourishment and medicine being administered by enemata. Then, as the symptoms decrease, a more strengthening diet may be gradually allowed, until the patient can enjoy fish, light puddings, poultry, &c. During the whole progress of the case stimulants should be forbidden; but if called for by the wants of the system, they must be used as enemata.

11. CANCER OF THE STOMACH.

The stomach may suffer from scirrhus, medullary, or colloid cancer; the affection is generally *primary*. Of 9118 cases of death from cancer, in Paris, from 1830 to 1840, the disease was seated in the uterus in 2996 cases, in the stomach in 2303, and in the breast in 1147. The pyloric aperture is the part most frequently attacked, next the cardiac orifice, and then the space along the smaller curvature. "Sometimes the cancer, at the time of death, is of small extent: but occasionally, and especially in colloid cancer, the disease spreads, until the greater portion, or even the whole of the stomach, is involved."* When the disease

* On Diseases of the Stomach. By Dr. George Budd. London, 1856.

causes obstruction or narrowing of the pyloric orifice, the stomach generally becomes greatly dilated. Gastric cancer is more common in men than women, and is rare before the age of thirty-five.

The *symptoms* will vary with the situation of the disease; when it is in—or near—the cardiac orifice, there will be merely pain and some difficulty in passing food into the stomach; if in the pylorus, pain and sickness, when, a few hours after eating—digestion being completed—the chyme has to pass into the duodenum; while, when the lesser curvature is the seat of the disease, the suffering will often be very slight.

Speaking generally, the principal symptoms may be described thus:—pain in the epigastrium, of a burning, lancinating, or gnawing character, augmented after eating, and often increased by pressure; eructations of fetid air; frequent nausea and vomiting, at first of ingesta and glairy mucus, subsequently of a bloody sanious fluid, and sometimes of dark grumous matter having a coffee-ground appearance; constipation; and extreme and increasing emaciation and debility. Occasionally a pulsating tumor is felt in the epigastrium when the cancerous mass lies over the aorta; in almost all cases, the countenance will present the peculiar hue and expression so characteristic of the cancerous diathesis.

The *treatment* can only be palliative; for the disease makes continual progress, exhausts the powers of life, and, in the majority of cases, causes death within twelve months. Medullary cancer is more rapidly fatal than scirrhus or colloid. Opium, administered either by the mouth or rectum, will be necessary; it should be given in free and repeated doses to subdue the pain. When the vomiting is very severe, nourishment must be given by means of enemata; where it can be borne, however, a milk diet will be serviceable. In some instances, perhaps, it may be advantageous to lessen the work of the stomach by the administration of pepsine; but I have not had the opportunity of testing this opinion. If the eructations are very fetid, a little wood-charcoal will do good. The extract of *bella-donna*, or a piece of lint soaked in hot tincture of opium,

applied to the epigastric region, will often prove grateful to the patient's feelings; a small blister may even be applied, and its raw surface afterwards dusted with a little morphia—one or two grains.

12. DILATATION OF THE STOMACH.

Dilatation of the stomach is a curious disease, to which attention has lately been directed. The enlargement is due generally to some affection of the pyloric orifice, which, causing contraction, prevents the food from readily passing into the duodenum. Hence, the stomach slowly and gradually dilates, until, at last, it comes to occupy almost the whole of the abdominal cavity, giving rise to appearances as if a tumor were present. These appearances are the more deceitful when the stomach is full, because fluctuation may then be present; when this viscus is empty, there will be a tympanitic sound on percussion. The patient suffers severely from cardialgia, gastrodynia, pyrosis, flatus, constipation, and vomiting. The vomited matters are frequently very large in quantity, they rapidly ferment, are intensely acid, and often resemble yeast in appearance; they are found, when microscopically examined, to contain large quantities of those vegetable parasites first described by Goodsir, the *Sarcinæ ventriculi*, together generally with torulæ, undistinguishable from the yeast plant. Dr. Todd has found the sarcinæ in ulceration of the stomach with contraction of the pylorus, and he suggests that these vegetable organisms result from the long detention of food in the stomach. There is but little doubt that this explanation is correct; but it is also probable that the intensely acid fluid in which the sarcinæ are found may itself irritate and close the pylorus spasmodically; in such cases, consequently, if we check the formation of these growths we shall cure the disease. Thanks to Dr. Jenner and Professor Graham, we are enabled readily to accomplish this latter object by the administration of the sulphite of potash, or by the sulphite of soda; which latter (F. 51) is perhaps preferable, since it is a more stable salt, and is less liable to be decomposed by keeping than the

sulphite of potash. The beneficial action of either of these salts depends upon their being decomposed in the stomach by the acids generated therein, sulphurous acid gas being liberated, which destroys the fungi. Dr. T. K. Chambers prefers the hyposulphite of soda, in doses of gr. v to xx thrice daily. The patient's diet should be regulated, and he should be allowed the unfermented in the place of the common bread.

13. ENTERITIS.

Enteritis, or inflammation of the intestines, varies much in severity, being sometimes so slight as hardly to attract notice, but often so severe as to threaten, or even rapidly destroy, life.

Symptoms.—Enteritis is generally preceded by rigors, hot skin, thirst, hard and frequent pulse. The patient then begins to complain of severe pain in the abdomen, especially around the umbilicus, and of distressing nausea and vomiting, and he lies on his back with his knees drawn up so as to relax the parietes of the abdomen. Very quickly these symptoms are followed by great restlessness, high fever, prostration of strength, anxiety of countenance, costiveness, and, in severe cases, delirium. As regards the pain, it must be remembered that it is increased by the slightest pressure; in colic, on the contrary, pressure gives relief. The matters vomited are usually highly offensive, and are sometimes stercoraceous. The pulse is at first full and hard, but it soon becomes wiry and almost imperceptible.

Enteritis sometimes occurs in young children from six to eight months old. The child is hot and restless in the early stages, and suffers from thirst; the tongue is dry, or covered with a brownish crust; there is frequent screaming; disturbed sleep; vomiting; pain in the abdomen, increased on pressure; and in some cases diarrhoea, the feces being often discharged with considerable force. Thus far the disease does not differ much from a sharp attack of diarrhoea. Severe constitutional symptoms, however, soon set in, such as great febrile oppression, thirst, vomiting, dry-

ness of the tongue, &c., followed by rapid and unexpected exhaustion, or sometimes by coma, with a peculiar pale, waxy appearance of the body. These symptoms may come on before the disease has lasted any considerable time, and whilst it can scarcely be distinguished from the ordinary bowel complaints of children. It should be observed that an erythematous redness is generally observed around the anus.

Treatment.—Opium freely administered is invaluable; hot fomentations sedulously applied to the abdomen will also give great relief. All purgatives are to be rigidly avoided, but attempts may be made to empty the lower parts of the intestinal canal by simple enemata, especially by warm water thrown up in large quantity, gradually and slowly, by means of a long flexible tube, as the tube of the stomach-pump. After the inflammation has ceased, mild aperients, such as castor oil, may be prescribed. The diet should be very simple, and ought to consist chiefly of broth, or beef-tea, and farinaceous foods. Cold water may be freely allowed. When there is a disposition to collapse, stimulants must be resorted to.

In children, the same kind of treatment must be pursued, though opium must be given to them with caution. The warm bath and hot fomentations, or linseed-meal poultices to the abdomen, will give relief. If the child is at the breast, no other food should be allowed; otherwise, the diet must be very mild, consisting chiefly of milk with a little broth.

14. COLIC.

Colic is characterized by pain in the belly, especially about the umbilicus, occurring in paroxysms, and relieved by pressure. It is accompanied by constipation, and often by vomiting. There is no fever, no quickness of pulse, and no depressing anxiety, as in enteritis.

In LEAD COLIC, or COLICA PICTONUM, so called from its former frequency among the Pictones, or inhabitants of *Poictou*, there are superadded to the former symptoms, a *twisting* pain around the navel, with retraction of the

abdominal integuments towards the spine, and pain in the back. We are indebted to the late Dr. Burton for pointing out a pathognomonic symptom of the presence of lead in the system, namely, the existence of a blue line around the edges of the gums. Painters most frequently suffer from this disease in this country; they often have several attacks before the muscles of the arms become affected with paralysis, causing *drop wrist*.

In the *treatment*, our first object must be to get the bowels to act. This may generally be best accomplished by administering a large dose of calomel and jalap; two or three hours subsequently placing the patient in a warm bath, and injecting part of the water into the bowels. Should these means fail, an ounce of castor oil must be given, or a full dose of sulphate of magnesia with sulphuric acid (F. 134). Opium will afterwards be necessary to remove all the pain; only farinaceous food should be allowed; and the patient should be purged for a few days by the sulphate of magnesia (F. 133), administered every morning. In severe lead colic, the treatment should be commenced with calomel and opium (F. 169), followed by castor oil. When the bowels have been freely acted upon, the iodide of potassium should be administered (F. 23); and a hot sulphur bath (F. 123) may be ordered. Benefit will be derived from frequently repeating the latter.

15. DIARRHŒA.

In most works on practical medicine many varieties of diarrhœa are described, such as the feculent, the bilious, the mucous, &c. These subdivisions are, however, quite unnecessary. It is much better to apply the term *diarrhœa* to all examples of simple purging; that is to say, to all cases in which the alvine evacuations are frequent, loose, or liquid.

Causes.—The causes of diarrhœa are numerous; the most common being over-feeding, or the use of improper food, or great mental emotion, or exposure to cold or to too great heat. From the latter cause relaxation of the bowels is common during the summer months; hence

it has been termed summer or English cholera. Diarrhoea is often also a symptom of many diseases, as of phthisis, &c.

Symptoms.—In addition to the purging there is generally some degree of nausea, a furred tongue, foulness of the breath, flatulence, griping pains, acrid eructations, and tenesmus; moreover, the stools are unhealthy. In summer cholera the evacuations are often composed chiefly of bile, the pains in the abdomen are violent, there are cramps in the legs, and the depression is often great.

Treatment.—This will of course depend upon the cause. When the purging arises from the presence of some offending matter in the intestinal canal, the expulsion of such matter must be aided by administering a dose of rhubarb or of castor oil, combining a few drops of the tincture of opium with the dose if there be much pain. If no such cause exist, we may endeavor to relieve the symptoms by opium, or by calomel and opium, or by the chalk mixture with catechu, &c., or by the pulvis cretæ compositus cum opio of the Phar. Lond., or by logwood, sulphuric acid, kino, or Dover's powder, according to Formulæ 90, 92, 102, 103, 104, 105, 112, and 115. The enema opii of the Phar. Lond., or a suppository of opium will often give great relief. Attention must be paid to the diet; emollient drinks and liquid nourishment only being allowed for a few days after the attack.

16. CHOLERA.

Cholera is probably the most fatal disease known in the annals of medicine. It is variously spoken of as Malignant, or Asiatic, or Algide Cholera; this latter term having reference to the diminution of animal heat which is one of the signs of the disorder.

It is generally believed that cholera first made its appearance in India in 1817, and in England in 1831. We are just as ignorant of the reason of its origin, as we are unable to explain why it should have raged in this country in 1831–32, 1848–49, 1853–54, and not during the intervening years. All that our experience has taught us

is this: that cholera attacks the poor in a much larger proportion than the rich; and that as we remove destitution, filth, foul air, and the causes of disease generally, so we destroy the agencies through which this formidable malady operates.*

The first two epidemics of this disease in England (1831-32, 1848-49) were the most severe; and each continued fifteen months. They began in October, spread gradually, increased, and then as spring advanced gradually subsided, to burst out afresh with the hot weather. It is worthy of notice, that in both epidemics the cholera entered England after the wheat harvest was over, at the close of the hot season; and that it was most fatal during and after the wheat harvest of the following year. In 1848-49 there were 52,293 deaths from this disease in England alone.

In 1853 there were 32 deaths from cholera in the metropolis between the commencement of February and the end of July; in August, 48 deaths; in September 99; in October, 293; in November, 318; and in December, only 62. During the early part of 1854, cholera had nearly disappeared: so that until the first of July only 16 fatal cases occurred. But it now again became epidemic, and between the 1st and 22d of July, the mortality was 38; during the week ending 29th July, there were 133 fatal

* As examples of the effects of over-crowding, the following are selected from a number of similar cases: Within the walls of an establishment for pauper children at Tooting, there were crowded 1395 children. Little more than 100 cubic feet of breathing space was allowed for each child; 500 being the smallest amount compatible with safety. One night cholera attacked 64 of these children; 300 were attacked in all, and within a week 180 perished. In the workhouse of Taunton there were 276 inmates. In some of the rooms the breathing space was not more than 68 cubic feet. Cholera swept away 60 of these inhabitants in less than a week. In the county jail of the same town, the breathing space allowed to each prisoner ranges from 819 to 935 cubic feet. While the poor were being destroyed in the workhouse, not a single case of cholera or of diarrhoea occurred among the prisoners.—*Two Lectures on Epidemics*. By Dr. Southwood Smith. 1856.

cases; and it then rapidly increased, until in the week ending 9th September there were 2050 deaths from cholera, and 276 from diarrhoea. Having now attained its maximum, the affection slowly declined, but did not entirely cease until the end of December; the total mortality from it in the metropolis in 1854 being 10,696.

Symptoms.—The cholera usually manifests itself in three stages. In the first, there is diarrhoea and vomiting, which are considered by Dr. Stevens as efforts of nature to expel the morbid poison from the blood and from the body; in the second stage, there are, in addition, cramps, spasms, coldness of the body, and sinking of the pulse; while in the third and last stage, there is collapse.

Considered somewhat more in detail, the chief symptoms may be described as copious vomiting, with purging of a peculiar rice-water kind of fluid, not containing a trace of bile; severe cramps in the lower extremities and abdomen, rendering the muscles as hard as wood, or drawing them into knots, as it were; sweating; suppression of urine; thirst, generally urgent; diminished circulation, and impeded respiration, causing great prostration, coldness of the tongue, breath, and surface of the body; lividity or blueness of the lips and skin generally; alteration of the voice; shrinking and pinching of the countenance, and indeed of the whole body; gradual lessening of the breathing; diminution or absolute disappearance of the pulse; and at last complete arrest of the circulation. In all cases the intellect remains clear until the last. Death generally takes place in from three to fifteen hours. Patients who survive beyond this period generally show signs of amendment, but often subsequently die poisoned by their own secretions—by the continuance of the suppression of urine. In more favorable cases a mild febrile exacerbation follows, which subsides gradually in a few days; or the patient may sink into a low typhoid condition, from which, under proper treatment, however, he slowly recovers. The attack is sometimes preceded by slight diarrhoea, but more frequently comes on suddenly without any warning.

Pathology.—The only explanation which can be given of the cause of cholera is, that it is due to some *materies morbi*, some septic agent in the atmosphere; the action of which is favored by filth of all kinds. As far as I can glean from the recorded evidence, and I have carefully studied the subject, it certainly appears to me to be contagious. We must remember, however, that cholera, like other contagious disorders, can only be taken by a person predisposed to disease: we may indeed compare a contagious or infectious disorder to a seed, which, unless put into a fit soil, undergoes no change, does not grow or take root. The predisposing causes of cholera are undoubtedly bad, unwholesome food—such as stale meat or fish, shell-fish, high game, bad vegetables, unripe fruit, &c. The effect of exhalations from badly constructed sewers is highly injurious; the influence of noxious trades and nuisances is powerful; while intemperance, impure water, uncleanness, vitiated air, are all prolific predisposing causes. So, again, anything which lowers the vital powers will predispose; as great fatigue, too long abstinence from food, diarrhoea, &c. Hence, in cholera times, it is most important to live by rule, to strictly avoid the use of purgative medicines, and to be most careful to check any tendency to looseness of the bowels by chalk mixture, opiates, and aromatics; since such looseness causes debility, and thus predisposes a person to receive the choleraic poison. I do not believe, however, that common diarrhoea can produce the specific poison of cholera, as some imagine; any more than it can give rise to the poison of smallpox or measles.

Morbid Anatomy.—Post-mortem examinations have thrown no light on this disease; the most characteristic appearance is found in the blood, which is usually of a tarry appearance and consistence. The bodies are generally also much shrunken, of a dusky, often livid color, and putrefaction is more delayed than usual. Very remarkable contractions of the voluntary muscles are sometimes noticed shortly after death from this disease. In the *Cholera Gazette* for 1832, it is mentioned that in India

the dead bodies of the soldiers were so violently convulsed, that their comrades, "in order to calm the timid, bound the limbs to the bed-frame." Another remarkable circumstance is, that the temperature of the body often rises after death from cholera; the increase of heat being maintained for many hours. This rise of temperature sometimes happens together with the muscular contractions, but often also without.

Treatment.—Every article of the *Materia Medica* has been tried in this disease; large doses of calomel, opium, brandy, sulphuric acid, cajeput oil, castor oil, croton oil, creasote, chloroform, sugar, sulphur, acetate of lead, log-wood, emetics, oxygen gas, hot air baths, venesection, &c., having been the favorite remedies. Directly a case recovers, the sanguine practitioner imagines that he has cured it, and immediately sets goose-quill to paper to record his success. The consequence is, that the medical journals, and even the daily papers, in cholera times, are filled with letters and communications recommending the most opposite and useless remedial agents; these epistles not only frequently serving to show the weakness and credulity of the writers, but also tending to bring discredit on the medical profession generally.

The only plan of treatment deserving of notice, since it is the only one based upon a scientific foundation, is that by salines, as suggested by Dr. Stevens;* consequently, and knowing, too, the common results of medical practice in this disease, I should certainly wish, were I ever unhappily to suffer from cholera, to be treated by this

* Since this paragraph was written in the early part of 1854, Dr. George Johnson has strongly advocated the use of castor oil. The Medical Council of the Board of Health, after investigating several cases treated by this agent, report, on 20th Sept., 1854: "From the above abstract, the details of which have been carefully investigated by the Committee, it appears that in 89 cases of cholera, treated by 14 different practitioners, with castor oil, on the plan recommended by Dr. Johnson, 68 were fatal; recovery having occurred only in 15 cases, while 6 remaining cases are still under treatment." Hence, without meaning the *slightest* disrespect to my friend Dr. Johnson, it seems unnecessary to alter the remarks in the text.

method. The following is an outline of it, as most successfully used on a large scale, in the prison of Cold-bath-Fields, in 1832.* Patients presenting the premonitory symptoms, diarrhœa and vomiting, were removed into an observation ward, where an even temperature was constantly maintained. A Seidlitz powder was immediately administered; if sinking was felt without purging, three or four teaspoonfuls of Epsom salts were added to the powder. On these agents acting, plenty of thin beef-tea, well seasoned with salt, was given; if there was any pain, a sinapism was applied to the gastric region; and thirst was relieved with seltzer, soda, or pure water *ad libitum*. Most of the cases were thus cured. If, however, cramps, coldness, or sinking of the pulse came on, the patients were considered as cholera cases in the second degree. The following was then administered about every half-hour: Sodii chloridi ʒj; Sodæ carbonatis ʒss; Potassæ chloratis gr. vij, dissolved in water. If there was much irritability of stomach, a large sinapism was applied; if much heat or burning pain, an additional quantity of carbonate of soda was added to the mixture. In cases in the stage of collapse, a strong solution of the same salts, dissolved in hot water (100° Fahr.), was thrown into the bowels, and repeated every two or three hours. Sinapisms were also applied to the stomach, between the shoulders, &c.; and in the cold stage, frictions with warm towels were used. A pure air for the patient to breathe was considered of the greatest importance.

In addition to the above, I should try the effect of hot salt-water baths; heat to the surface by hot blankets, bottles of hot water &c.; and when the vomiting was severe, would allow Wenham Lake ice to be continually sucked. The greatest caution will subsequently be required for many days as to diet. As a rule, broths and farinaceous food only should be allowed, without any solids whatever, until the renal secretion has been fully re-established, and all the symptoms have vanished.

* On Asiatic Cholera, &c. By Dr. William Stevens. London, 1853.

17. DYSENTERY.

Dysentery consists chiefly in inflammation and ulceration of the mucous membrane of the colon, especially perhaps of the lower part of this gut and the rectum; hence it has been sometimes termed colitis. Cases, however, are occasionally seen in which the ulceration does not stop at the ilio-cæcal valve, but extends for many inches up the small intestines.

Symptoms.—At the commencement, there is uneasiness and pain in the abdomen, of a griping character, with a frequent inclination to go to stool, which is followed by relief. As the disease becomes developed, the desire to go to stool is more frequent, and the ease which succeeds more transient; the evacuations are thin, mucous, and bloody; and frequently mixed with small, hard, separate lumps of feces, termed *scybalæ*. The scanty evacuations soon produce distress rather than relief; the patient is constantly tormented with tenesmus and griping; the stools become fetid, dark colored, and mixed with shreds of lymph; and the bladder sympathizes with the rectum, causing frequent micturition. The urine also is high colored, and produces scalding when passed; sometimes there is strangury. In all cases there is more or less fever and constitutional disturbance; the tongue is furred, and the papillæ prominent; pulse quick and small; skin harsh, hot, and dry; thirst urgent; no appetite; dyspnoea; and great prostration. In fatal cases, the abdomen becomes tense, full, and tender, especially on pressure; the pulse gets weaker; the tongue dry, red, glazed, and aphthous; the evacuations are extremely offensive and watery; hiccup comes on with great exhaustion and emaciation; and death soon follows.

Causes, &c.—Dysentery is now a very rare disorder in this country. In tropical regions it is at times very prevalent, and is often very fatal to our soldiers and sailors. It has been ascribed to wet and cold, to contagion, to malaria, polluted water, bad food, drastic purgatives, &c. It often leads to abscess of the liver. After death, ulcera-

tion of the large intestines and enlargement of the intestinal glands are the appearances most commonly found.

Treatment.—Bloodletting, both by the lancet and by leeches applied in the track of the colon, is usually recommended, and is, I believe, still practised by many. In the dysentery of this climate, it is worse than unnecessary to bleed. Warm fomentations and hot poultices always give great relief. When we fear the lodgment of scybala, a dose of castor oil may be given; but otherwise only soothing remedies should be applied to the inflamed canal. Hence opiate enemata are often very useful; moreover, they relieve the painful tenesmus. The remedy which seems to have had the most salutary effect in the chronic dysentery from which our soldiers suffered in the Crimea, was morphia. One grain of the hydrochlorate was given twice or three times a day, with some aromatic spirits of ammonia and nitric ether. According to Sir James McGrigor, when the dysentery is complicated with disorder of the liver, mercury will be necessary; either the hydrargyrum cum creta with Dover's powder may be given, or calomel and opium, in the usual form. When the sanguineous discharge is abundant, many authorities recommend the acetate of lead. The warm bath may be frequently employed with great advantage. The diet must be of the lightest kind, such as farinaceous food, milk, and thin broths.

18. OBSTRUCTION OF THE BOWELS.

This fearful disorder may arise from several conditions. Before mentioning these, it may be remarked that when there is obstruction with fecal vomiting the disease is called *ileus*; while inasmuch as *strangulated hernia* is perhaps the most frequent cause of obstruction, so in every case of obstinate constipation the practitioner should make a careful examination of those parts of the abdomen, thigh, and hip, and, in women, of the vagina, at which the intestine may descend.

Dr. Haven has collected, from various sources, the histories of 258 cases of intestinal obstruction; which, with-

out including examples of inguinal, femoral, or umbilical hernia, he has thus tabulated :*—

Three divisions of the causes of intestinal obstruction are made, viz :—

1. *Intestinal*, or those originating in and implicating the mucous and muscular coats of the intestinal walls :—

a. Cancerous stricture.

b. Non-cancerous stricture, comprising—

1. Contractions of cicatrices following ulceration.

2. Contraction of walls of intestine from inflammation, non-cancerous deposit, or injury.

c. Intussusception.

d. Intussusception associated with polypi.

2. *Extramural*, or those causes acting from without, or affecting the serous covering :—

a. Bands and adhesions from effusion of lymph.

b. Twists or displacements.

c. Diverticula.

d. External tumors or abscesses.

e. Mesocolic and mesenteric hernia.

f. Diaphragmatic hernia.

g. Omental hernia.

h. Obturator hernia.

3. *Intramural*, or obstructions produced by the lodgment of foreign substances :—

a. Foreign bodies, hardened feces, calculi, &c.

In the first class, the large intestine is affected more than twice as frequently as the small; in the second class, the reverse happens. The average duration of the attack of obstruction is shorter in the first class than in the second; on the whole, the average is about three weeks. Sir Astley Cooper mentions three other causes of obstruction, viz., hernia at the ischiatic notch, at the foramen Winslowii, and perineal hernia; but none of these causes existed in either of the 258 cases.

In 169 examples of intestinal obstruction collected by Mr. Phillips,† 69 were instances of invagination or intus-

* American Journal of Medical Science, vol. lvi. 1855.

† Medico-Chirurgical Transactions, vol. xxxi. London, 1848.

susception; 60 of strangulation by the constriction of bands, adhesions, and abnormal openings; 19 were caused by disease of the coats of the bowel; 11 by impaction of hardened feces, or concretions; and 16 were due to the pressure of tumors external to the bowel.

Symptoms.—The principal symptoms are constant vomiting, which is at first simple, consisting of the contents of the stomach and mucus, but which in a few days becomes stercoraceous or fecal; pain varying in degree, often very severe; great mental depression; and the pathognomonic symptom, constipation. In almost all instances, the prostration sets in early; acute peritonitis is very uncommon; and gangrene is most frequent in intussusception and obturator hernia. The lower the obstruction is situated, the less urgent will be the vomiting; if, for instance, it is in the duodenum, the vomiting will be incessant from the beginning; if in the colon, it may be absent for some time. It might be thought that the ilio-cæcal valve would prevent the return of the contents of the colon into the ileum; the preliminary dilatation, however, renders this valve quite patulous. When urine is freely secreted, the obstruction cannot be very high up.

Treatment.—In the management of obstinate constipation, we at first resort to the use of purgatives and purgative enemata (F. 132, 159, 185, 186). Directly we are convinced, however, that there is some mechanical obstruction, our plan must be altered, for, under such circumstances, purgatives are poisons. Opium is then our sheet-anchor, and it must be given in large and often repeated doses; in some cases calomel may be combined with it (F. 169), but I should prefer, as a rule, trusting to the opium alone. At the same time we may throw up large quantities of soap and water, or any other simple enema, by means of a long flexible tube, which is to be passed as far as possible without the use of any force. If there be no tympanitis, air may be injected; cases being recorded in which such treatment has overcome the obstruction. At the same time the patient must abstain as much as possible from food and fluids, being assured that the more he takes the more his sufferings will be increased. When these means

fail, the obstruction may sometimes be overcome by a surgical operation. Thus, the abdomen may be opened in the middle line, and attempts made to discover and remove the cause of stricture; or the distended gut may be cut down upon, punctured, its edges secured to the sides of the wound, and an artificial anus made. In a hopeless case, I should certainly resort to one or the other of these proceedings; taking care not to delay too long, lest the patient die from exhaustion. It is, however, exceedingly difficult to determine the proper time for operating; since we know that in the most frequent form of internal strangulation, that by membranous bands, a spontaneous cure may take place by ulceration. So again, we cannot depend upon the state of the patient, because prostration often sets in very rapidly and early. As I should never resort to the use of crude mercury in doses of one or two pounds, or of small shot, or of tobacco injections, these agents need not be further noticed, though they have been recommended.

19. INTESTINAL WORMS.

There are five entozoa—*εστος*, within, and *ζωον*, an animal—occasionally found inhabiting the intestinal canal; of which three possess an alimentary tube, and are therefore called hollow worms, or *Cœlelmintha*—*κοίλος*, hollow, and *ελμινς*, a worm—and two which have no abdominal cavity, and are hence termed solid worms, or *Sterelmintha*—*στερεός*, and *ελμινς*.

In the first class we have—

1. The *Tricocephalus dispar*, or long thread-worm, usually found in the cœcum and large intestines, measuring about two inches in length, and having a very slender body. It is often found in considerable numbers, even in the intestines of healthy persons; during life these worms give rise to no symptoms.

2. The *Ascaris lumbricoides*, or large round-worm, is found in the small intestines, especially of ill-fed children. It somewhat resembles in size the common earth-worm, varies in length from six to nine inches, and is of a light yellow color. Although the habitat of this worm is the

small intestines, yet it may pass into the stomach or downwards into the colon; and consequently be vomited in the one case, or passed with the stools in the other. Sometimes these worms are very numerous; thus Dr. Hooper has recorded an instance in which a girl voided upwards of 200 in one week. The symptoms which it gives rise to are thirst, disturbed sleep with grinding of the teeth, pallid countenance, fetid breath, swelled belly, emaciated extremities, depraved appetite, slimy stools, itching of the nose, tenesmus, and itching of the anus.

3. The *Ascaris vermicularis*, or small thread-worm, is found in the rectum; and is the smallest of the intestinal worms, averaging usually about a quarter of an inch in length. It gives rise to intolerable itching and irritation about the anus, tenesmus, depraved appetite, picking of the nose, depraved breath, and disturbed sleep.

In the second class we find—

1. The *Tænia solium*, or common tape-worm of this country, which exists in the small intestines, varying in length from five to ten feet, and in breadth from one line—at its narrowest part—to four or five at its central or broadest portion. The head of this parasite is small and flattened, having in its centre a projecting papilla, armed with a double circle of hooks, around which are four suckers or mouths, by which nourishment is imbibed; the generative apparatus consists of a ramified canal or ovarium containing the ova, and occupying the centre of each joint. The symptoms of its presence are not very striking, its existence being generally unsuspected until single joints are passed in the stools; in many cases, however, there is a continual craving for food, debility, pain in the stomach, emaciation, and itching about the nose and anus.

2. The *Bothriocephalus latus*, or broad tape-worm, is almost peculiar to the inhabitants of Switzerland, Russia, and Poland. It differs from the common tape-worm in having its segments of a greater breadth than length. The extreme fertility of the *bothriocephalus latus* may be imagined by considering that each foot of the well-developed worm contains 150 segments or joints, each joint possessing its own ovary and male organs. Hence each

joint is fertile; and as each ovary would produce 8000 ova, it may be calculated that ten feet of such a worm would produce 12,000,000 of ova. They are very rarely met with in this country, but they are so occasionally. Professor Owen, examining the collection of a worm doctor in Long Acre, found three specimens; two had come from persons who had been in Switzerland, but of the third nothing was known.

Symptoms.—The most common symptoms produced by intestinal worms are—colicky pains and swelling of the abdomen; picking of the nose; itching of the rectum and fundament; foulness of the breath; irregular bowels; grinding of the teeth at night; and voracious or impaired appetite. The most conclusive sign is the passage of some of the worms or joints of them in the feces; and indeed without this, the other symptoms are but of little value.

Treatment.—We have several remedies for the round and tape-worm, such as the oil of turpentine, scammony and jalap, compound jalap powder with calomel, the bark of the pomegranate root, the kousso, and the oil of male fern. I am in the habit of trusting to the latter, which I thus administer: On the first morning I commence with a dose of castor oil, or a Seidlitz powder; and during the day keep the patient on very low diet, only allowing a little good beef-tea. At night the purgative is repeated, and thus the worm or worms get thoroughly uncovered by the removal of the contents of the alimentary canal; and hence receive the full benefit of to them poisonous dose of oil of male fern, which is taken the first thing on the following morning, according to F. 180. By this means, perhaps twice repeated, I seldom fail to remove the whole worm, including the head. To prevent its re-formation, tonics should be given, especially the mineral acids in infusion of quassia. The patients should also be directed to take plenty of salt with their food, and to have the latter well cooked.

The ascarides may generally be killed by enemata of infusion of quassia, or of common salt, or of lime-water, or of the tincture of the sesquichloride of iron—in the proportion of half an ounce to half a pint of water.

SECTION VI.

DISEASES OF THE LIVER, PANCRÉAS, AND
SPLEEN.

1. INFLAMMATION OF THE LIVER.

INFLAMMATION of the liver may be acute or chronic; both forms are rare in this country, but are common in tropical climates. Their diagnosis is often very difficult.

ACUTE HEPATITIS.—The prominent *symptoms* of acute inflammation of the liver are—high fever, with hot skin, thirst, and scanty urine, the fever sometimes assuming a typhoid character; fulness of the right hypochondrium from enlargement of the gland; pain—more or less severe—in the region of the liver, increased on pressure, deep inspiration, or cough; inability to lie on the left side; a yellow tinge of the conjunctiva, and often complete jaundice; dyspnoea; sympathetic cough and vomiting; and hiccup. When the pain is of a sharp lancinating character, it is supposed to indicate inflammation of the serous covering of the gland; when dull and tensive, the parenchyma is the part affected; when the convex surface of the organ is the seat of the inflammation, the chest symptoms will predominate; when the concave, the stomach symptoms will be the most marked. It is well known that in hepatic affections, the right clavicle and shoulder become the seats of gnawing and aching sympathetic pains; sometimes also—probably when the left lobe of the liver suffers—pain is referred to the left shoulder. According to Annesley, pain in the right shoulder is a sure indication that the disease is in the right lobe. Andral has noticed that in some cases the only pain has been in the head, which has been sufficiently intense, constant, and long-continued, to attract *exclusively the patient's attention*.

Causes.—The morbid action may be induced by some mechanical injury, though it is seldom that this is a cause. The disease is much more frequently due to suppurative inflammation of some vein, contaminating the blood by pus. Ulceration of the intestines, of the stomach, of the gall-bladder or gall-ducts, are all causes of suppurative hepatitis; and perhaps a hot climate, by deranging the functions of the gland, may give rise to it, as may also marsh-fevers. Spirit drinking often produces adhesive inflammation and induration of the liver, but not the suppurative form.

- *Terminations.*—The most favorable termination of acute hepatitis is resolution. When this happens the pain and fever gradually abate, and the patient is soon well. The inflammation may, however, go on to diffused suppuration, or to the formation of circumscribed abscesses, or even to gangrene.

Abscesses of the liver sometimes attain a great size; and, in extreme cases, may contain several pints of pus. They may burst into the peritoneum, and give rise to fatal peritonitis. Most frequently, however, when the matter gets near the surface of the gland, adhesive inflammation is set up in the portion of peritoneum immediately above it, and lymph is poured out, which glues the organ to adjacent parts—to the abdominal parietes, the diaphragm, stomach, or some part of the intestines; the pus is then discharged externally, or into the lung, or pleura, or stomach, &c.

Hepatic suppuration and dysentery often occur together. We are indebted to Dr. George Budd* for proving—contrary to the opinion formerly entertained—that the dysentery is the primary disorder, the abscess the secondary; the latter being caused by the fetid gaseous and liquid contents of the large intestine, or by the pus resulting from its ulceration being absorbed and conveyed immediately to the liver. Abscess of this gland may also occur from other causes besides those already mentioned, the

* On Diseases of the Liver, 3d edit. London, 1857.

most common being ulceration of the rectum, bladder, vagina, &c.

Very rarely the inflammation terminates in gangrene, or gangrene may follow suppuration. In one of the patients of the Dreadnought Hospital Ship, mortification resulted from opening an abscess.

Treatment.—Various observers have recognized that the strength of the patient requires to be supported in this disease, rather than to be lowered by bleeding, and the administration of mercury. The latter remedy is, however, still used very indiscriminately; and Dr. Abercrombie's observation remains true, that mercury is employed "with very undefined notions as to a certain specific influence, which it is believed to exert over all the morbid conditions of this organ. If the liver is supposed to be in a state of torpor, mercury is given to excite it; and if it is in a state of acute inflammation, mercury is given to moderate the circulation, and reduce its action."* In all cases it appears that *active treatment* is contra-indicated; but it is especially so, when we infer that suppuration has taken place. Nourishing food, with tonics, such as quinine and iron, the nitro-muriatic acid and bark, &c., will then be necessary; the bowels must be regulated by rhubarb, or by rhubarb and aloes; and habits of strict temperance inculcated. If we can be quite sure that the surface of the abscess is adherent to the abdominal parietes, we may—after making an exploratory puncture with a grooved needle—open it with the knife, or may puncture it with a trocar; but great judgment and caution must be exercised. On the whole, Dr. Budd seems to be in favor of allowing the abscess to burst of itself; and I suppose that Mr. Waring is of the same opinion, for in the summary which this gentleman has published of eighty-one cases operated on, there are only fifteen recoveries.

CHRONIC HEPATITIS.—This form of inflammation may be the sequel of acute, or it may arise from disease of the liver, such as cancer, tubercles, &c. The *symptoms*, ac-

* Pathological and Practical Researches on Diseases of the Stomach, &c., p. 360. Edinburgh, 1828.

according to Cullen, are some fulness and weight in the right hypochondrium; shooting pains felt at times in that region; uneasiness or pain on pressure; discomfort from lying on the left side; perhaps some degree of jaundice; and sometimes a certain amount of fever, combining itself with more or fewer of these symptoms. Intemperance and the repeated use of alcoholic liquors are the most frequent causes of chronic hepatitis; this is more especially the case in hot climates. The most efficacious remedies are saline purgatives and perhaps mercury, repeated in small doses, for a long period. Three or five grains of blue pill may be given every night, with a draught of salts and magnesia, or salts and taraxacum (F. 133, 146), every morning for a few weeks, taking care not to lower the patient too much. Iodine is sometimes employed, especially locally; the unguentum iodinii compositum, or the unguentum hydrargyri iodidi may be rubbed over the region of the liver every night. Taraxacum and the hydrochlorate of ammonia (F. 56, 57) are often recommended.

2. CIRRHOSIS.

Deep-seated adhesive inflammation of the liver and its capsule gives rise to different effects, according to the parts principally involved. When the effused lymph is found surrounding the large branches of the portal vein and the small twigs separating the lobules, the substance of the liver is rendered tough by this new fibrous tissue; which—on slicing the gland—is seen to form thin lines between irregular masses of lobules. At the parts on the surface corresponding to these lines, the capsule is drawn in, so that the surface has a “hob-nailed” appearance; the tissue of the liver is also paler than natural, owing to the presence of this fibrous tissue, and it is often yellowish from accumulation of biliary matter in the cells. Hence, a section of the liver has the grayish-yellow color of impure beeswax, and this disease has, in consequence, been called by the French *cirrhosis*.*

* See Budd, Opus cit.

Causes.—The most common cause of cirrhosis is spirit drinking; this has led English practitioners to call it the *gin-drinker's* liver. It is worthy of notice, that the alcohol taken in wine and beer is not as destructive as that taken in the form of ardent spirits. Dr. Paris explains this by supposing that in the first case the alcohol is not only more intimately mixed with water, but that it exists in combination with its extractive matter; and consequently that it is incapable of exerting its full effects before it becomes altered in its properties, or, in other words, partially digested. A hot climate increases the vicious effects of alcohol.

Symptoms.—These are generally few and obscure, until the effused fibrin has caused impediment to the flow of the portal blood, and to the secretion and escape of bile. Slight enlargement of the liver, pain in the right hypochondrium, indigestion, occasional feverishness, dry and rough skin, and an unhealthy sallow look, are the most prominent symptoms. When relief has been obtained, the patient fancies himself well, and pursues his usual occupations; though at the same time he finds that he gets weaker and thinner, and that his complexion remains sallow. At the end of some months, or perhaps years, the contraction of the effused lymph obstructs the circulation through the portal vessels; an exudation of serum takes place from the extreme branches of the veins converging to form the vena portæ; and hence the belly becomes enlarged by dropsical effusion, which gradually increases so as to cause great distension. The veins on the surface of the abdomen enlarge—showing that the current of the portal blood is seriously impeded; and hemorrhage occurs occasionally from the stomach and intestines. When ascites has once occurred, it continues, increases, and in some twelve months or so the patient dies from exhaustion.

Treatment.—At the commencement of the disease Dr. Budd states that most benefit will be derived from cupping or leeches over the liver; from saline purgatives, such as the sulphate of magnesia, or bitartrate of potash; from a regulated and rather low diet; and from the avoidance of all alcoholic drinks. If the patient will not bear the loss of any blood, repeated blisters—we are told—may be em-

ployed; and considering that gin-drinkers are the last class of people likely to derive benefit from bleeding, I think that blisters and dry cupping will be always preferable to leeches and scarifications. Iodide of potassium, inunction with the iodine ointment, and small doses of mercury so as slightly to affect the mouth, will often do good. When ascites has taken place, mild diuretics, purgatives, tonics, and sedatives are the remedies to trust to. If there be urgent dyspnoea, we must remove the fluid by tapping.

3. FATTY DEGENERATION OF THE LIVER.

Fatty liver, or fatty degeneration of the liver, is of frequent occurrence in pulmonary consumption, and in fatty degeneration of other internal organs, as the kidney, &c. In such cases, the gland is found large; pale; of a kind of buff color—with brown spots interspersed; soft; and more greasy than natural, owing to the interstitial deposit of oil-globules. If we examine a small portion of the lobular substance microscopically, numerous cells loaded with oil-globules are readily distinguished. This disease gives rise to no important symptoms; there is no pain, jaundice, or dropsy; occasionally, however, it produces a little inconvenience, from the increased bulk of the gland. Persons who live well, who indulge in alcoholic drinks, and lead indolent lives, most frequently suffer from it.

4. CANCER OF THE LIVER.

Every variety of cancer, except perhaps gelatiniform or colloid cancer, has been met with in the liver; medullary or soft cancer is perhaps more common than the scirrhous or hard kind.

Symptoms.—When a liver contains numerous masses of cancer, it is generally much enlarged, extending far below the false ribs, even to the brim of the pelvis. These masses do not give rise to inflammation of the hepatic tissue; but when superficial, they often cause peritonitis, which is generally very partial, and of the adhesive kind, so that after death the tumors are found adherent to the diaphragm or

to the abdominal walls. The remaining symptoms are very obscure; constant diffused pain and tenderness, with disorder of the digestive organs, being generally the most prominent.

Causes.—Malignant disease of the liver is often a secondary affection; that is to say, it results from the transfer of cancer-cells by lymphatics and veins from the breast, stomach, kidney, &c. When primary, it does not occur before the age of thirty-five.

Treatment.—Our remedies can only be palliative. Relief to the pain must be given by sedatives, especially by opium, conium, and belladonna: while the digestive organs should be strengthened by mild tonics, and by a light, nourishing diet.

5. HYDATID TUMORS OF THE LIVER.

Hydatid tumors occur in the liver more frequently than in any other organ; but they are occasionally met with in the spleen, omentum, and brain. They consist of a sac, lined by a thin bladder or cyst, and filled with a limpid, colorless fluid, floating in which, numerous small cysts, similar to the cyst lining the sac, and varying in size from a pea to a pigeon's egg, are usually found. To these cysts or bladders Laennec gave the name *acephalocyst*—a bladder without a head. The *acephalocyst* lining the sac is composed of finely laminated, friable coats, about the firmness of coagulated albumen. Sometimes it contains no floating hydatids, or very few; in other cases it is literally crammed with them; and these, again, it is said, may contain another generation. To distinguish these different kinds, as well as to mark the mode of their increase, naturalists have divided these productions into two species: 1st, the *acephalocystis endogena* of Kuhn, likewise called *socialis*, *vel prolifera* by Cruveilhier, the *pill-box hydatid* of Hunter, which is the kind most commonly developed in the human subject, and in which the fissiparous process of generation takes place usually from the internal surface of the parent cyst, the progeny being sometimes successively included; and, 2d, the *acephalocystis exogena* of Kuhn—

eremita, vel sterilis of Cruveilhier—which develops its progeny generally from the external surface, and is found in the ox and other domestic animals. The true nature of these acephalocysts has long been a subject of investigation. M. Livois seems, however, to have settled the question by his discovery that they are the dwelling-place of those minute animalcules, to which Rudolphi gave the name *echinococcus*, from the cylinder of hooks surrounding the head. M. Livois states that echinococci exists in all acephalocysts, and this observation has been in a great measure confirmed by Dr. Budd and other observers. When an acephalocyst is opened, its inner surface is seen to be studded with numerous white, opaque particles, which are found by the microscope to be distinct echinococci.

The *echinococcus hominis* is a transparent, colorless, oval-shaped animalcule, displaying an apparatus of sucktorial prominences and hooklets at the cephalic extremity, and measuring about the one two-hundredth of an inch in length, and rather less in breadth. In structure the animal is a mere integument, one-half—the head and neck—being susceptible of retraction into the other half. The head is a flat disk at the extremity of the neck, having imbedded in its substance an apparatus of small hooks, thirty-four in number, disposed in a circle. Immediately behind the head are four rounded sucktorial processes, beyond which follows the body, while at the extremity of this is a short peduncle by which the animal attaches itself to the wall of the acephalocyst. When the animal is viewed with its head retracted within its body, the circle of hooks is seen through the transparent integument appearing like a ring in the centre of the body.*

Symptoms.—When a hydatid tumor forms in the liver, its growth is generally slow. It gives rise to little inconvenience beyond a sensation of weight, so that its presence is often not suspected until found after death. When the tumor is of a large size, it may then be easily felt; sometimes it compresses the portal vein or vena cava, causing

* Erasmus Wilson on the *Echinococcus Hominis*. *Medico-Chirurgical Transactions*, vol. xxviii. London, 1845.

ascites and cedema of the legs. It may burst into the peritoneum, causing fatal peritonitis, or into the lung, or into the intestines, or through the abdominal wall; in the two latter cases, the contents will often be entirely discharged, and the sac ultimately closing up, will leave the patient well. When the tumor opens into the lung, the patient becomes so worn out with the constant expectoration of hydatids and puriform matter, and the constitutional disturbance is so severe, that he generally sinks under it.

Sometimes a hydatid tumor gets well without opening, namely, by the secretion of a thick, putty-like matter within its sac, owing either to the destruction, or at all events causing the destruction of the hydatids.

Treatment.—Two agents, iodide of potassium and common salt, are supposed to possess the power of stopping the growth of these tumors. Confirmatory evidence is still required, however, to prove conclusively the value of these remedies. When we can be certain in our diagnosis, and are sure that the tumor is adherent to the abdominal wall, we may effect a cure by puncturing the sac. It is needless to say that the greatest caution will be necessary.

6. JAUNDICE.

Icterus, or jaundice, is rather a sign of some affection of the liver than a separate disease.

Causes.—It may be produced in two ways, says Dr. Budd: 1st, by some impediment to the flow of bile into the duodenum, and the consequent absorption of the retained bile; and, 2d, by defective secretion on the part of the liver, so that the principles of the bile are not separated from the blood.

The most common impediment to the flow of bile into the duodenum, is the impaction of a *gallstone* in the ductus communis choledochus. Gallstones consist of inspissated bile, and chiefly perhaps of cholesterine—a peculiar substance, which exists in a state of solution in healthy bile, but which, under certain circumstances, becomes released from its solvent, and assumes its natural, crystalline form. In all cases the nucleus of the concretion consists of a small

piece of solid, biliary matter, or of inspissated bile cemented by mucus. As many as 3000 gallstones have been counted in a single bladder. Sedentary occupations and free living tend to their formation. When the obstructing stone or stones have passed into the duodenum, they are voided with the feces, and the cause of the jaundice being removed, the skin gradually assumes its natural color. The other causes of jaundice from obstructed gall-ducts are, cancer of the liver or pancreas, closure of the ducts from adhesive inflammation of the liver, from spasm of the ducts, and from constipation, the loaded intestine pressing upon the duct, and so impeding the flow of bile.

The secretion of bile may be suppressed or rendered defective by congestion and inflammation of the liver; by mental shocks, or grief, or dissipation; by certain poisons in the blood, and by certain disorders of the stomach.

Symptoms.—The skin and conjunctivæ are of a yellow color; the urine has the tint of saffron; and the feces are whitish, or of a light clay appearance. If the disease continue long, there may be stupor, delirium, and other indications of cerebral derangement; the patient also becomes weak and thin from mal-nutrition; and frequently there appears to be a tendency to hemorrhage, as epistaxis, bleeding from the gums, purpura, &c. When there is obstruction from a gallstone, the most acute suffering is induced; the pains being paroxysmal, and often attended with vomiting and hiccup. Should the concretion not pass through the duct, fatal exhaustion may set in.

Treatment.—The selection of remedies must, of course, be guided by the cause. When the jaundice is due to some obstruction, hot poultices, anodyne fomentations, warm baths, saline purgatives, and low diet will be called for; while during the passage of a gallstone, full doses of opium will be necessary, either alone or combined with draughts of hot water containing plenty of the bicarbonate of soda. On the other hand, the disease being due to suppressed secretion, we may perhaps cautiously try mercury, or taraxacum, or the nitro-muriatic acid (F. 19, 35, 56, 347, 348); but in most instances, as we shall be merely *working in the dark*, it will be better to rest contented

with gentle saline purgatives, diaphoretics, baths, rest, and regulated diet.

7. DISEASES OF THE PANCREAS.

We know so little of these diseases, and they are so rare, that I shall do little more than enumerate them.

The most common morbid conditions of the pancreas are—congestion, hypertrophy, inflammation, induration, softening, fatty degeneration, cystic tumors, hydatid cysts, and cancer. Calculous concretions, composed of carbonate or phosphate of lime, are not uncommonly found in the pancreatic duct or its branches; they are usually of a white color, of variable size, ranging from a pea to a walnut, and they exist either singly or in numbers up to fifteen or twenty. These various affections are generally accompanied by enlargement of the gland; and they often give rise to pain in the epigastrium, fulness, nausea and vomiting, loss of appetite, inodorous eructations, mental depression, and emaciation. Fatty stools have also been noticed in connection with certain diseases of the pancreas, but whether due to the pancreatic disease or not is at present uncertain. It is, however, highly probable that they are a sign of derangement of the functions of this gland; whose office, according to Bernard, is to assist digestion and the absorption of fatty matters.

The *treatment* of supposed pancreatic disease can only be conducted on general principles, that is to say, by chiefly alleviating the most prominent symptoms.

8. DISEASES OF THE SPLEEN.

The spleen may suffer from congestion, inflammation, suppuration, and gangrene; from the formation of serous and hydatid cysts in it; and also from simple enlargement.

Enlargement of the spleen is readily diagnosed by the situation of the tumor in the left hypochondrium, by its general appearance and shape, and by the history of the case. It results most commonly from intermittent fever or *ague*. "*Patients affected with tumid spleen are generally*

of a sallow and unhealthy aspect ; the bowels irregular ; the motions generally dark colored. They are said to be liable to hemorrhage from various parts of the body ; there is deranged digestion with muscular debility ; and often a general unhealthy state of the system, with a tendency to sloughing sores from slight causes. There is frequently a dry cough ; and in protracted cases, hæmatemesis, and at last general dropsy.”* In other cases, and probably in the majority, the disease seems to have wonderfully little effect on the general health ; a feature which lends support to the physiological doctrine that this gland is not a very important one.† In a case at present under my care, the enlargement is so great that the gland occupies the entire left half of the abdomen ; general debility is the prominent symptom. The structure of the spleen may not be otherwise than healthy in these instances of enlargement ; or the tissues may be indurated and the capsule thickened ; or there may be numerous cysts scattered throughout the gland.

When the enlargement is the result of ague, purgatives with bark of quinine will be necessary. In other cases steel, or the bromide of potassium (F. 43) will prove the most efficacious remedies. Under all circumstances, the general health must be supported by good nourishing food ; and by residence in a dry and bracing locality.

* Dr. Abercrombie, *Opus cit.*, p. 385.

† Dr. Crisp regards the spleen as “comparatively an unimportant organ in the animal economy ;” and considers “that one of its offices is that of affording an adequate supply of blood to the stomach and liver, and to act as a reservoir for the blood when the balance of the general circulation is deranged ;” while another office is “to secrete an albuminous fluid, which performs some part in the process of sanguification.” The result of Mr. Gray’s investigations would lead him to conclude that the function of the spleen “is to regulate the quantity and the quality of the blood.” See the Treatises of Dr. Crisp and Mr. Gray—*On the Structure and Use of the Spleen.* London, 1854–55.

SECTION VII.

DISEASES OF THE PERITONEUM, OVARIAN
DROPSY, &c.

1. PERITONITIS.

THE peritoneum may suffer from acute or chronic inflammation.

ACUTE PERITONITIS.—This form of inflammation is characterized by pain, at first confined to parts, but afterwards extending over the whole abdomen, increased on pressure, and attended with high fever. It is sometimes preceded by chilliness and rigors, and a feeling of weakness; in other cases, it comes on abruptly, with acute distress in some part of the abdomen, generally in the hypogastric or one of the iliac regions. The pain is generally very acute, soon spreads over the whole abdomen, and is aggravated by any movement which calls the abdominal muscles into action, or by pressure, even the weight of the bedclothes being insupportable; the patient consequently lies quiet on his back, with his knees bent and legs drawn up. The abdomen is tense, hot, and frequently tympanitic; the bowels are constipated; there is often nausea and vomiting; the skin is very hot and dry; the pulse rapid and weak; the respirations hurried; the tongue furred; and the countenance is expressive of suffering and great anxiety. After a time, the belly ceases to be tympanitic, but remains somewhat enlarged from the effusion of serum. When a fatal termination is approaching, the abdomen often becomes much distended, the pulse very quick and weak, the countenance ghastly, and death occurs from exhaustion.

The principal *causes* of peritonitis are cold and damp, perforation of the stomach or intestines, the bursting of *hepatic abscess*, &c.; it may also arise from inflammation

of the intestines, from diseases of the ovaries, and from the contamination of the blood by morbid poisons, especially, perhaps, that of erysipelas.

That fearful malady of women recovering from child-bearing termed PUERPERAL FEVER is very generally accompanied by peritonitis. It usually comes on about the third day after labor, but sometimes later. The inflammation commences in the uterine portion of the peritoneum, and spreads rapidly over the whole of its surface; in its symptoms it does not differ from common acute peritonitis. It seems to result from contamination or poisoning of the blood, either by putrefaction of part of the placenta left in the uterus, or by the absorption of some of the products of inflammation, or by contagion. There is, unfortunately no doubt that this disease may be carried by a third person from one puerperal woman to another; hence a practitioner, when he has attended a patient with puerperal fever, is bound, I believe, to discontinue for a time his attendance upon cases of labor. Changing his clothes, washing his hands with a solution of chlorine or of cyanide of potassium, wearing oil-silk gloves, will not, it is to be feared, prevent him from carrying the poison of this malignant disease about him; and I should therefore recommend that he absent himself from the lying-in room for at least fourteen days from the last day of his exposure to the fever. In proof of the justice of these remarks, it may be mentioned, as noticed by Dr. Armstrong, that in an epidemic of this disease which occurred in Sunderland, in 1813, forty-three women suffered; of these, forty were attended in their labors by one surgeon and his assistant.

In the *treatment* of acute peritonitis, we have one remedy which is invaluable, and that is opium. This drug should be given in grain doses every three or four hours until the pain is thoroughly relieved; and I believe that by it alone we may save the patient's life. Hot fomentations properly and sedulously applied also give great relief. As I have adopted this plan of treatment in all my cases for the last two years, and am fully convinced of its value, I *trust that it will be fairly tried without inflicting general*

bleeding, leeches, or mercury on the sufferer. In all cases, purgatives do harm. The diet must consist at first of slops only; should the patient become very low, great good may be effected by the judicious use of wine and strong beef-tea. Absolute repose of body is also essential.

CHRONIC PERITONITIS.—This is sometimes the sequel of acute, but more frequently an independent affection.

M. Louis is of opinion that this disease, when not following acute inflammation, is always complicated with strumous tubercles. Dr. Hodgkin* says: "My own inspections would lead me also to the conclusion that chronic peritonitis is very frequently conjoined with tubercles; yet this concurrence has not been so uniformly supported by cases observed in this country as it has been by Louis' cases. That form of peritonitis which is accompanied by copious effusion, and which might easily be regarded as ascites, occurs without any appearance of tubercles. The same may be said of other cases in which the concrete product of inflammation had been more considerable."

The *symptoms* are somewhat obscure, the abdominal pain being slight, and the constitutional sufferings variable. After a time, effusion of fluid takes place, the abdomen enlarges, and fluctuation is felt.

The *treatment* must consist in attention to the bowels; in allowing a mild but nutritious diet, and in employing blisters or stimulating liniments to the abdomen; iodine paint and the iodine ointment may also be recommended. I think I have seen benefit also from the internal use of iodine, and from cod-liver oil. These cases are, however, very unpromising.

2. ASCITES.

Ascites, or dropsy of the peritoneum, may arise from chronic peritonitis, from cirrhosis, cancer, obliteration of the portal vein, and scrofulous disease of the liver, causing

* Lectures on Morbid Anatomy of Serous and Mucous Membranes, vol. i. p. 149. London, 1836.

obstruction to the free passage of the blood through the system of the vena portæ; from disease and enlargement of the spleen; from malignant disease of the omentum; and from a few other disorders. Cirrhosis is, however, the most common cause.

Diagnosis.—The extent of the abdominal enlargement will of course depend upon the quantity of liquid present, but the distension will always be uniform; fluctuation will generally be distinct, and there will, in most cases, be resonance over the higher parts of the belly on percussion, owing to the floating of the intestines, thus, as a rule, prominently distinguishing ascites from ovarian dropsy. I say in most cases, for the distension may be so great that the breadth of the mesentery may be insufficient to allow the intestines to reach the surface of the fluid; dulness will then, of course, result. Again, there is occasionally, though very rarely, resonance on percussion in ovarian dropsy. This may happen after tapping from the cyst filling with air; or it may occur from a communication forming between the cyst and the intestine, and so allowing of the escape of flatus from the latter into the former. I have noticed, however, that ordinarily where there is any difficulty in the diagnosis of ascites and ovarian dropsy, the mere fact of difficulty may be taken as presumptive evidence in favor of the case being one of ascites. Ovarian dropsy very rarely simulates ascites. In both diseases there will be dyspnoea, which will be urgent in proportion to the distension. The quantity of the effusion is sometimes remarkably large. A few years since, I was obliged, owing to the severe orthopnoea which existed, to tap a patient in the Hospital for Women, suffering from ascites; when 460 ounces of a clear, urinous-looking fluid, loaded with albumen, were removed, the whole of which had been secreted in rather less than one month.

Treatment.—Attempts must be made to procure absorption of the fluid; hence diuretics, drastic purgatives, and mercurials are to be carefully employed. One or other of the Formulæ 24, 48, 127, 148, 150, 175, 207, 209, &c., may be advantageously tried. The muriate of ammonia,

either singly or with taraxacum (F. 56, 57), has been found useful in Germany. I have seen benefit also from the iodide of potassium, combined with the ammonio-citrate of iron (F. 28) when there has been great debility.

When the distension gives rise to much distress, we must resort to paracentesis. The patient should lie upon the left side, along the edge of the bed; and the trocar and canula should be introduced midway between the umbilicus and pubes. The horizontal position is preferable, since it is the most comfortable to the patient, no pressure is required upon the abdomen, and especially because syncope is much less likely to follow the evacuation of the fluid. After the operation I tightly bandage the abdomen, and generally continue the use of compression for two or three weeks, and longer where it seems to be beneficial. In spite of all treatment, however, the fluid is usually—but by no means always—re-secreted; in such cases the disease ultimately proves fatal.

3. OVARIAN DROPSY.

The most frequent disease of the ovarium is encysted or—as it is termed—ovarian dropsy; which consists in the conversion of this organ, or of parts of it, into cysts, generally perhaps by enlargement of one or more of the Graafian vesicles. Under the same name, simple serous cysts formed in the broad ligaments, and dropsy of the Fallopian tubes arising from closure of their extremities, have been included.

It would be quite out of place to treat of this disease at any length in this work; to consider it fully, a volume would be required. I shall therefore merely make a few plain observations.

An ovarian cyst may be single or multilocular; that is to say, it may consist of one sac only, or it may be made up of a variable number of small cysts. All ovarian tumors run their course much more rapidly than is generally supposed. Cases of fibrous tumors of the uterus, which often exist for years without any suffering, are repeatedly mistaken for ovarian tumors. Mr. Paget has

remarked that ovarian cysts are the only unexceptional instances of the transformation of innocent into malignant tumors. Adhesions often form between these tumors and the peritoneum; I believe that they may be distinguished by every physician possessing the *tactus eruditus*.

As regards the *treatment* of ovarian tumors, nothing can be more absurd and reprehensible than the practice which some gentlemen adopt of administering hydragogue cathartics, diuretics, emetics, mercurials, iodine, iodide of potassium, liquor potassæ, bromide of potassium, muriate of lime, &c. Equally injurious are the local applications which the same practitioners employ, such as leeches, blisters, iodine ointment, friction with stimulating liniments, electricity, &c. It is only necessary to examine a single ovarian tumor, to see that such agents cannot by any possibility do good; consequently, as they are of a very powerful nature, they must be productive of harm. That such is really the case I know too well; and I am led to speak thus plainly, from the painful examples which have come under my notice at the Hospital for Women, of health entirely ruined, and death hastened, by violent medical treatment. The only way in which relief or cure can be effected is by paracentesis, followed by pressure and the administration of mercury, as recommended by Mr. I. B. Brown; or by paracentesis, and leaving an elastic catheter in the wound to withdraw the fluid as it is re-secreted; or by ovariectomy. The injection of ovarian cysts with the tincture of iodine has been lately much practised; in two cases in which I have tried it, no good whatever resulted; while in the hands of some physicians it has caused death. Nature sometimes effects a cure by rupture of the cyst, extrusion of its contents into the sac of the peritoneum, and subsequent absorption.

My first rule in these cases is this: when the tumor is not increasing in size, is not affecting the patient's health, and is unproductive of any unpleasant symptoms beyond those resulting from its weight, I do nothing at all, merely directing the patient to see me in the event of any change; these cases are unfortunately very rare. In deciding be-

tween paracentesis and ovariectomy, regard must be had to the patient's health, constitution, age, condition, and nature of tumor; presence or absence of adhesions, &c. Where there is any hope of cure from paracentesis, it is of course to be resorted to, in preference to removal of the tumor; but in certain cases, and especially in the multilocular tumors, ovariectomy may save the patient from an early and painful death. Only a few weeks ago—March, 1857—I had the pleasure of seeing the first patient on whom I performed this operation; and although more than five years have now elapsed, she has not had one day's illness since her cure. For further observations, see Dr. Druitt's "Surgeon's Vade-Mecum," sixth edition; and papers by the author in *Lancet*, 18th September and 21st November, 1852; and in *Medical Times and Gazette* for 1853, vol. vi. pages 16, 392, 526.

4. TABES MESENTERICA.

Tabes mesenterica is a name given to a tubercular or strumous degeneration of the mesenteric glands; it might be termed abdominal phthisis.

The *symptoms* consist of pain in the bowels, more or less constant, sometimes severe, causing the child to keep his legs drawn up towards his belly. The lips are of a deep red color, and the angles of the mouth are covered with small ulcers, or the whole lip is fissured. The bowels are variable, though generally relaxed; the motions are often unhealthy, and extremely fetid. The abdomen is swollen and tense; while the other parts of the body waste away, until an extreme degree of emaciation exists; there is great pallor and general debility, which increases rapidly. Symptoms of pulmonary consumption may supervene, or the child may die worn out by the abdominal disease, unless remission takes place; recovery is generally slow.

The *treatment* must consist in the use of mild nourishing food adapted to the child's age and strength; asses' milk and farinaceous preparations being very useful. Cod-liver oil will be of much use in all cases, especially when given

with tonics, and sometimes with small doses of the iodide of potassium and the ammonio-citrate of iron (F. 31). In some cases benefit seems to have been derived from alterative doses of hydrargyrum cum cretâ combined with Dover's powder, or with the compound chalk powder with opium of the Phar. Lond. Change of air, especially to the sea-side, will often work wonders.

SECTION VIII.

DISEASES OF THE KIDNEYS, SUPRA-RENAL
CAPSULES, AND BLADDER.

1. NEPHRITIS.

NEPHRITIS, or inflammation of the kidney, may arise without any appreciable cause, or from cold, from the formation of calculous matter, from various injuries, or from the administration of cantharides or oil of turpentine. It gives rise to neuralgic pains in the loins, especially in the region of the kidney, the pain sometimes extending along the ureter to the neck of the bladder, or to the groin, scrotum, or testicle, and being increased by pressure or by exercise; there is often numbness of the thigh; and, in men, retraction of the testicle, with frequent micturition. When this pain arises from other causes besides inflammation, as from a "fit of the gravel," the passage of a small calculus from the pelvis of the kidney along the ureter to the bladder, it is termed *nephralgia*. In addition to the above symptoms, there is much constitutional disturbance, fever, nausea, and vomiting; great thirst; pulse hard, frequent, and full; constipation; tympanitis; and though the desire to pass urine is frequent and urgent, yet the secretion is scanty, high colored, and often contains blood. The inflammation may terminate in resolution, or, if it continue long, in suppuration; which latter will lead frequently to ulceration, the formation of renal fistulæ, and the establishment of a purulent discharge, followed by hectic fever, which often ends fatally. In more favorable cases, however, the pus passes out by the natural passages, and is found in the urine. Sometimes the disease proves fatal at an earlier stage, by inducing coma, owing to the *retention of urea in the blood*, which thus acts as a poison.

Sometimes, also, typhoid symptoms appear early, and death occurs from pure exhaustion.

The *treatment* must consist in warm fomentations, the vapor bath, the hot-water bath, mild purgatives, and diaphoretics, especially those containing opium, such as Dover's powder. Our object, indeed, must be to rest the inflamed gland, and to get its work done by the skin and mucous membrane of the bowels.

2. ACUTE DESQUAMATIVE NEPHRITIS.

This renal affection has its origin from many causes, as intemperance, cold, and the cholera poison, &c. ; but especially is it often due to scarlet fever.

Symptoms.—As a general rule, the disease is ushered in with rigors and chilliness; these symptoms being soon followed by feverish reaction, headache, restlessness, pain and tenderness in the loins, and often vomiting. The dropsy, which it gives rise to, is an early symptom; the face first becomes puffy, followed by general swelling of the areolar tissue throughout the body, and by effusion of fluid into one or more of the serous cavities. At the same time there is a frequent desire to pass urine; which is scanty, of a dark smoky color, and on being tested by heat and nitric acid is found to be highly albuminous. Examined microscopically, it is seen to contain masses of coagulated fibrin, blood corpuscles, epithelial casts and cells, and occasionally crystals of lithic acid. The earliest sign of improvement is a disappearance of the dropsy, and an increase in the quantity of urine secreted. It is not uncommon for a patient during convalescence from this disease, to pass from four to six pints of urine during the twenty-four hours; the natural quantity averaging only from a pint and a half to two pints.

It is very curious that acute desquamative nephritis from scarlatina is more frequent after a mild than after a severe attack, owing probably to the want of caution which is often observed in such cases during the period of desquamation. The patient gets exposed to cold, and immediately the *escape of the fever poison* through the pores of the skin is

checked; and, as a consequence, is directed to the kidneys in larger quantities than they can bear. It usually commences about the twenty-second day from the setting in of the fever.

Treatment.—In seeking to cure acute inflammation of the kidney, we have to remember, as Dr. George Johnson remarks, "that there has been, first, a morbid condition of the blood, which has excited disease in the kidney, and that, as a secondary consequence of the renal disease, the blood has become contaminated by the retention in it of urea and other excrementitious matters."* Our object of treatment must therefore be to rest the kidney, while we purify the blood by means of the other excretory organs. To carry this object into practice, the patient must rest in bed, in a moderately warm room; low diet; plenty of simple drink, water or barley-water; and in order to get the skin and bowels to act freely, the hot-air bath or hot-water bath must be used daily for three or four times, diaphoretic medicines (F. 200, 201, 202) administered, and saline or other purgatives (F. 133, 142, 150). Diuretics should never be had recourse to in this disease; since in the early stages they do great mischief, while in the latter they are unnecessary. As recovery advances, great care must be taken to avoid exposure to cold; and all errors in diet should be rigidly guarded against.

3. CHRONIC DESQUAMATIVE NEPHRITIS.

For our knowledge of this disease we are entirely indebted to the able researches of Dr. George Johnson; the following remarks are consequently a mere epitome of his observations.†

Chronic desquamative nephritis is characterized by a long-continued shedding of epithelium, which appears in the urine in a more or less disintegrated state. The tubes gradually lose their epithelial lining, and subsequently be-

* On Diseases of the Kidney, p. 126. London, 1852.

† *Opus cit.* Also, Medico-Chirurgical Transactions, vol. xxx. p. 165. London, 1847.

come atrophied or filled with a new material; or they may continue to be nourished, secrete serum into their cavities, and so become dilated into cysts. Meanwhile the renal bloodvessels undergo changes and the kidney becomes wasted and indurated. The urine is, for the most part, albuminous; it is usually greater in quantity and of a less density than in health, varying from 1005 to 1015. If we examine it microscopically, we shall find abundant amorphous granular matters, either scattered or in the form of cylinders, which have evidently come from the renal tubes, and which are known as *granular epithelial casts*. The disease is frequently a consequence of chronic gout, or of some allied disorder of the general health. It produces great changes in the blood, and many and various constitutional disorders consequent upon these changes; amongst which the most frequent are anasarca, dropsy of one or more serous cavities, inflammation of the serous membranes, hypertrophy of the heart—with or without disease of the valves—and, lastly, either structural changes, or great functional disturbance of the nervous centres.

The *treatment*, for the most part, resolves itself into the adoption of means for the removal of the morbid state of the blood and constitution generally; of which the renal affection is only a result and a manifestation. When the disease is the result of gout, we must regulate the diet, disallowing sugar and all fermented liquors; attend to the various excretory functions; and employ such remedies as are indicated by the patient's general condition and state of health. Great benefit will always be derived from keeping the skin warm, and from the occasional use of the warm-water, air, or vapor bath; diaphoretic medicines (F. 200, 202) are also useful. Gentle aperients; dry cupping over the loins frequently repeated, or counter-irritation to the same part by sinapisms, tartar-emetic ointment, or ammonia liniments; quinine, iron, and other tonics; these are all remedies which often afford considerable relief. Mercurials, and especially all diuretic medicines, are strictly to be avoided. In cases attended with *dropsy*, we may use those purgatives which produce copious watery stools, such as *elaterium*, gamboge, jalap, &c. (F. 148, 149, 150).

Sometimes there is spontaneous diarrhœa : this is not to be checked, unless it produces exhaustion. When there is much depression we must avoid drastic purgatives, and simply get the skin to act freely by diaphoretics, and especially by the use of the hot-air bath, repeated every night, or on alternate nights. In these cases the diet must be generous, and a small quantity of wine may often be allowed with advantage.

4. FATTY DEGENERATION OF THE KIDNEY.

In 1827, Dr. Bright first pointed out the frequent connection of anasarca and other dropsical affections with a peculiar disease of the kidneys, the prominent character of which is the appearance of albumen in the urine, and the deposition of a peculiar granular matter in the substance of the renal gland, together with the gradual atrophy of its cortical and tubular structure. Hence this affection is commonly known as *Bright's disease*, or as *granular degeneration of the kidney*. The investigations thus commenced have now been perfected by Dr. George Johnson, and I again have to avail myself of his labors.

The appearances in the urine which characterize this disease are—a scanty secretion, which is highly albuminous, and of low specific gravity; it is generally, in the early stages, free from sediment, and, when examined by the microscope, is found to contain neither renal epithelium, nor casts of tubes, or, if any, only small waxy casts. After a period, variable in different cases, while the general characters of the urine remain unaltered, there appears a light, cloudy sediment, which is usually found to contain some of the small waxy casts, in which are entangled one or more globular or oval cells, inclosing a variable number of oil-globules; some of the cells being completely filled with oil, and presenting the appearance of dark opaque masses. Some of the casts have adhering to their surface a variable number of oil-globules, which have probably escaped from ruptured cells; while numerous cells containing oil, together with detached oil-globules, are scattered over the field of the microscope.

The chief *symptoms* produced by this disease are—gradually increasing debility; inflammation of the serous membranes; anasarca of the limbs, with dropsy of the different cavities; and ultimately coma, which soon ends in death. It is often the consequence of acute desquamative nephritis; or it may arise from scrofula, bad living, constant exposure to cold and wet, intemperance, &c.

In the *treatment*, we can do little more than relieve symptoms. The diet should be regulated; and abstinence from intoxicating drinks, starch, sugar, and perhaps fatty articles of food insisted upon. In other respects, the rules laid down in the preceding section must be attended to.

5. GRAVEL.

Gravel may be defined as the discharge of gritty powder or sand, or of small calculi, with the urine; occasioning pain and irritation in the kidneys, ureters, bladder, and urethra.

When a patient experiences “a fit of the gravel,” the suffering is most severe; especially during the passage of calculus down the ureter. As soon as this substance reaches the bladder, however, all pain ceases; and if it be true, as some philosopher has observed, that the height of happiness is sudden relief from suffering, the patient is indeed happy. When there is merely gritty matter or sand, no pain whatever is experienced.

The most common forms of gravel are—the urates of lime, potash, and soda, with small quantities of ammonia; it is often called lithate or urate of ammonia, but Dr. Hassall has clearly proved that the quantity of ammonia present is always very small, and is probably only derived from the decomposition of urea. Next in frequency we find lithic or uric acid, or red sand. Then a deposit, consisting mainly of the triple phosphate of ammonia and magnesia, mixed with amorphous phosphate of lime. Next a deposit of oxalate of lime. And, lastly, one of cystic oxide. Urinary calculi are composed of either urate of lime and potash, &c., or of uric acid, cystic oxide, carbon-

ate of lime, oxalate of lime, triple phosphate of ammonia and magnesia, phosphate of lime, or of silica.

The *treatment* will vary with the species of gravel. In the lithic acid diathesis, a vegetable diet, avoidance of alcoholic drinks, the free use of simple diluents, gentle exercise, attention to the bowels, and the use of alkaline aerated waters—as those of Vichy or Carlsbad—will be beneficial. Alkalies often give relief, and none can be employed so advantageously as the salts of potass; since soda often combines with the lithic acid, and forms a hard, insoluble salt, while magnesia in large doses is very apt to cause intestinal concretions. The bicarbonate of potass may be freely given, without any of these disadvantages; the liquor potassæ in large doses (3ss in water ℥ij) is also an agent possessing valuable properties, which appear to have been generally overlooked.

In the phosphatic diathesis a directly opposite course of treatment will be necessary. The diet must be generous, a moderate allowance of wine must be allowed, and tonics—such as bark, iron, and the mineral acids, especially the nitro-muriatic—administered. Opium is also a valuable drug in these cases; complete mental relaxation must be insisted on.

In the oxalic-acid diathesis, all articles of food containing this agent—such as the common garden rhubarb—must be avoided; saccharine substances should also be disallowed. The nitro-muriatic acid will generally prove useful; and tepid or cold bathing, change of air, &c., should be recommended.

The suffering caused by the passage of a calculus down the ureter will be most readily relieved by the warm bath, by the free use of emollient diluents—especially by barley-water containing a couple of drachms of spiritus ætheris nitrici, and by large doses of opium. The subsequent passage of the stone from the bladder will be facilitated by introducing a large silver catheter with an open extremity, and washing out this viscus with warm water. When too large to be thus got rid of, surgical interference—lithotritry or lithotomy—will be required.

6. SUPPRESSION OF URINE.

Suppression of urine, or ischuria renalis, usually occurs in corpulent persons advanced in life; it is also a frequent and often fatal result of cholera and other morbid poisons in the blood. It must not be confounded with retention of urine.

If no urine be separated from the blood, urea accumulates in this fluid, circulates with it to every part of the body, and acts as a poison—especially upon the brain—inducing coma, which soon ends in death.

The *treatment* is generally difficult. Dry cupping over the loins, friction with stimulating liniments, the hot bath, purgatives, and diaphoretics, are the remedies I should trust to. Some practitioners have recommended diuretics: in the majority of cases, it appears to me that these agents would merely increase the difficulty; but instances may occur in which they would be beneficial, when probably the tincture of cantharides (F. 213) would be the best suited to our purpose.

7. DIABETES.

Diabetes, or diabetes mellitus, as it is sometimes termed, to distinguish it from chronic diuresis—an increased flow of urine, which has been improperly termed diabetes insipidus—is characterized by the presence of sugar in the urine.*

Symptoms.—The quantity of urine secreted in this disease is sometimes enormous, being increased from the healthy standard of three or four pints in the twenty-four hours, to forty, fifty, or even more. The urine has a sweetish taste and odor, and is of a high specific gravity, varying from 1030 to 1050; the worse the disorder the higher will be the specific gravity. As so much water is thus got rid of by the kidneys, we can imagine that the most prominent

* For the tests for detecting sugar in the urine, see the author's *Manual of Clinical Medicine*, p. 302, &c. London, 1855.

effects will be great dryness and harshness of the skin; hardness of the feces, with constipation; urgent and constant thirst, which it is difficult to allay; pain in the loins; coldness of the extremities, with burning pain in the hands and feet; great emaciation and debility; sponginess of the gums; mental depression; together with a constant feeling of sinking at the stomach, inducing a voracious appetite. This disorder generally progresses slowly and insidiously, and often ends in—or becomes associated with—pulmonary consumption. It almost always proves fatal.

Pathology.—This disorder can hardly be called a disease of the kidneys; since in it the sugar is likewise found in the blood, and in the feces. It is, indeed, much more probably due to some cerebral disease interfering with the assimilative functions. As Dr. Prout observes, diabetes does not consist in the development of sugar in the stomach, for this is a normal process; but in the greater or less destruction of the converting—and consequently of the still more important organizing—functions of the assimilating organs. From the researches of Bernard we learn that sugar is always being formed in the liver, but especially while the process of digestion is going on. If we examine the blood as it enters the liver by the portal vein it contains little or no grape sugar; whereas the blood leaving the gland by the hepatic vein contains a notable quantity. In health the sugar thus formed during the passage of the blood through the liver is burnt in the lungs; but when—either from impairment of the functions of the assimilating organs, or from the formation of an unusually large quantity of sugar—only part is consumed, the remainder is eliminated with the renal and other secretions. Section of both pneumogastric nerves, as well as any violent shock to the nervous system, destroys the power of the liver to form sugar. Irritation of the root of the pneumogastrics in the fourth ventricle of the brain, increases the formation of sugar and causes it so to abound in the blood that it is secreted with the urine—in short, artificial diabetes is produced. When the respiratory function is violently stimulated, sugar appears in the urine; or when ether or chloroform is given, a temporary diabetes is sometimes produced.

Treatment.—The first point is to regulate the diet; which should be nutritious, and as free as possible from all saccharine or amylaceous materials. Of all kinds, animal food is the best; and the patient may take his choice of different sorts of meat, poultry, game, fish, and eggs. Cabbage, cauliflowers, broccoli, spinach, watercresses, and celery may also be allowed; but fruit, and especially potatoes—which contain a large quantity of starch—must be forbidden. Patients would be much better without bread; when used, care should be taken that it is well fermented and stale, and it will be better toasted. The bran bread (F. 8) recommended by Mr. Camplin, has often very salutary effects; it must, however, be used continuously. The thirst will be best appeased by a drink containing the diluted phosphoric acid, as recommended by Dr. Paris (F. 322); or by weak claret and Vichy water, when wine is not contra-indicated. Weak beef-tea, or mutton-broth, will also often allay thirst better than other kinds of drink. Beer, wine and spirits, and tea should be avoided; but the latter is less injurious than coffee. Weak brandy and water, or claret, may sometimes be allowed. The clothing must be warm; and cold and damp especially avoided.

Amongst the medicinal remedies opium is the most important, since under its use the patient is not only comforted, but his symptoms are mitigated, and the specific gravity of the urine lowered; it may be advantageously given in the form of Dover's powder. The hot-vapor bath will often excite the skin to action, when other means fail, and thus be productive of much comfort; and so also with the warm-water bath. The salt tepid bath (F. 125) should be tried. The citrate of ammonia or potash with steel (F. 367) often proves very valuable: it should be taken for two or three weeks at a time, then discontinued, and recommenced according to the general strength. Cod-liver oil frequently does good. Creasote (F. 37) has also been thought beneficial, especially by Dr. Watson, who believes that it tends to check the conversion of the food into sugar.

8. CANCER OF THE KIDNEY.

Cancer is probably the rarest form of renal disease. Dr. Walshe has collected forty cases of cancer of the kidney from different sources. In thirty-one of these, pure encephaloid—or one of its varieties—was the species of cancer observed, while there were only five cases of scirrhus. The disease affected both organs sixteen times, the right alone thirteen times, the left alone six. Cancerous degeneration, like many other forms of renal disease, commences usually in the cortical substance, and thence extends to the medullary cones and to the walls of the pelvis and ureters. In one case of renal cancer about which I was consulted by Dr. Greenhalgh, the gland was enlarged to such an extent, that it simulated in many respects a solid ovarian tumor, and had indeed been diagnosed as such. When I saw the patient she was pregnant; consequently—as only an incomplete examination could be made—no positive opinion was given, though I was certainly inclined to regard the tumor as ovarian.

Dr. Owen Rees states that the following are the chief points to be noticed in the *diagnosis* of malignant disease of the kidney from calculus: 1. In malignant disease the blood is generally passed in larger quantity than in calculus of the kidney. 2. There is more frequent tendency to nausea *on slight occasion* than in calculous disease. 3. Microscopic examination of the urine will frequently show pus or mucus in excess, if there be calculus; whereas in malignant disease this sign does not so frequently exist. 4. The appearance of those suffering from malignant disease of the kidney is nearly always indicative of a state of *anæmia* more or less advanced. 5. In calculus, *hæmaturia* generally follows upon some unwonted exertion. 6. Careful examination of the abdomen will frequently lead to the detection of tumor, if there be malignant disease of the kidney.

In the *treatment* we can only do good by supporting the patient's strength, and by relieving pain with opium or other sedatives.

9. HÆMATURIA.

Hæmaturia, or hemorrhage from the mucons membrane of the urinary passages, may proceed from the kidneys, bladder, or urethra. It is common in the early stages of those forms of renal disease which arise from a morbid state of the blood; hence, as we have seen, it is a frequent result of acute desquamative nephritis. It may also arise from malignant disease of the kidney, or bladder; from the presence of a calculus either in the kidney, ureter, bladder, or urethra; or it may be—though it is only rarely so—vicarious of some other hemorrhage, as of the catamenia.

Urine, containing blood, will be found of a dark red or even black color, and loaded with albumen. Dr. Prout states that when the "blood is derived from the *kidney*, it is in general equally diffused throughout the whole urine; on the contrary, when derived from the *bladder*, the blood, for the most part, comes away in greater or less quantity at the termination of the discharge, the urine having previously flowed off nearly pure." Dr. Watson has also remarked that the expulsion of slender, cylindrical pieces of fibrin, which have evidently been moulded in the ureter, is characteristic of hemorrhage from the kidney, or commencement of the ureter. When the blood comes away in drops or in a stream, unmixed with urine, the urethra is in all probability its source.

The *treatment* will vary with the circumstances under which the hemorrhage occurs. Where there is malignant disease, or a calculus present, astringents may be resorted to; the best being the tincture of the sesquichloride of iron, gallic acid, the diluted sulphuric acid, or the acetate of lead with opium (F. 93, 94, 97, 99, 106). Sometimes the oil of turpentine, in fifteen or twenty minim doses, will check the discharge (F. 95, 96). Where there is some morbid poison in the blood, warm baths and purgatives will prove the most effectual: while hemorrhage from the urethra may often be checked by the application of ice, or by passing a large bougie, and leaving it in the passage

for some hours. Lastly, in vesical hemorrhage, a solution of alum (ʒj to ʒij to the pint of water) may be injected into the bladder.

10. DISEASE OF THE SUPRA-RENAL CAPSULES.

The supra-renal capsules have long been objects of great interest to the anatomist and physiologist; for though they probably perform some important office in the animal economy, yet at present that office has been but vaguely guessed at. Hence we must be content for the time with believing that they serve in some way to minister to the elaboration of the blood, in common probably with the spleen, thymus, and thyroid glands; though the exact nature of their functions, or the manner in which they perform them, cannot even be surmised. All that we know is, that the size of the capsules depends upon the age: since they are larger than the kidneys in the embryo, about an equal size in very young children, and only about the twentieth part as large in the adult.

The obscurity which surrounds these organs has not been dispelled by the discovery of Dr. Addison, that certain cases of severe anæmia, with a peculiar discoloration of the skin, are due to—or at least accompanied by—disease of these capsules.* Dr. Addison having observed that cases of anæmia occasionally came under his care, generally terminating fatally, and presenting certain prominent characteristics, such as pallor, faintness on the least exertion, great debility, loss of appetite, sickness, emaciation, and a peculiar discoloration of the skin; and finding that no adequate cause—as, *e. g.*, loss of blood, diarrhœa, chlorosis, purpura, or renal, splenic, strumous, or malignant disease—existed, or rather could be discovered, for these important symptoms, he gradually seems to have imagined that the fault existed in the supra-renal capsules; and the more numerous the cases he examined, the stronger his convictions grew. As in most cases of anæmia, so in

* On Diseases of the Supra-Renal Capsules. By Thomas Addison, M. D., &c. London, 1855.

the present form, the disorder commences almost imperceptibly with symptoms of failing health and debility; the patient becomes languid and weak, the pulse feeble, the appetite impaired, the stomach irritable, the whites of the eyes pearly, and the body emaciated; while occasionally there is urgent gastric disturbance with vomiting, and sometimes indications of disturbed cerebral circulation. With all or most of these symptoms, for which no adequate cause can be found, there is a characteristic discoloration gradually taking place in the skin; most marked usually about the face, neck, superior extremities, penis, scrotum, the flexures of the axillæ, and around the navel. The skin appears of a dingy or smoky hue, the depth of color being variable; sometimes slightly marked, and occasionally—as in one instance—“so universally and so deeply darkened, that, but for the features, the patient might have been mistaken for a mulatto.” (p. 5.) It is worthy of remark that the discoloration gradually increases, becoming more marked as the other symptoms acquire greater prominence, and as the disorder approaches to its fatal termination. In only one of Dr. Addison's recorded cases does the blood seem to have been examined microscopically; on which occasion a considerable excess of white corpuscles—leucocythemia—was found to exist.

The *treatment* of this affection is particularly unsatisfactory, almost all the examples having terminated fatally. In the present state of our knowledge, we can do little more than attempt to remedy the prominent symptom—prostration; for which purpose the various preparations of steel should be tried, combined with the most nourishing kinds of food.

11. IRRITABILITY OF THE BLADDER.

Irritability of the bladder is said to exist when an individual is troubled with a frequent desire to pass urine. It may arise from organic disease of the kidneys, bladder, prostate gland, or urethra; or it may be due to the pressure of the enlarged uterus during pregnancy, or to the pressure of foreign bodies in the bladder, or to the irritation

of hæmorrhoids; or it may be, as it generally is, merely functional, *i. e.*, dependent on some functional derangement of the digestive organs, kidneys, or bladder, or on some constitutional nervous affection.

Symptoms.—The desire to micturate comes on suddenly and very frequently, so that in some cases a patient has to pass urine every thirty or forty minutes. There is generally an inability to resist the desire; but if this can be checked, uneasiness and pain are induced by doing so. The urine is seldom increased in quantity, except in hysterical subjects; in the latter the increase is often considerable, and the secretion is pale and very watery, the proportion of solid constituents remaining as in health. After this affection has lasted some time, the bladder often diminishes very much in size; so that instead of being able to contain from fifteen to twenty ounces of urine, as in health, it cannot hold more than two or three ounces.

In all cases the urine should be examined; when it is found preternaturally acid or alkaline, loaded with lithates or phosphates, or oxalates, or when it contains pus, albumen, sugar, or any other morbid secretion, we must trace the disease to its origin; since the irritability of the bladder is a mere symptom of some severe constitutional derangement, or of dangerous organic disease.

Treatment.—In simple irritability of the bladder, not of long duration, attention to regimen generally, the avoidance of all stimulating drinks, and tepid salt-water baths, will often effect a cure. The dilute nitro-muriatic acid in decoction of *pareira brava* is very useful when the urine is alkaline or only slightly acid; when the secretion is abnormally acid, small doses of liquor potassæ in infusion of buchu do great good. Opiate suppositories at bedtime, or five or ten grains of the extract of henbane in a pill, lessen the irritability in all cases, and allow of a good night's rest.

Ferruginous tonics should be ordered when there is general debility, or when the irritability comes on in young women at the catamenial periods. In a few obstinate cases the tincture of cantharides, with or without the

tincture of the sesquichloride of iron, has relieved all the symptoms after other means have failed.

12. SPASM OF THE BLADDER.

Like other muscular organs, the bladder is subject to spasmodic attacks of pain.

Symptoms.—The patient complains of severe pain at the lower part of the abdomen, and along the urethra to the extremity of the penis. The urine may be passed involuntarily, but generally it is retained; there being a constant desire to micturate without the power to do so. Frequently, also, there is tenesmus.

When the spasm has been of long continuance, death has resulted, with all the symptoms of suppression of the urine. In these cases the vesical extremities of the ureters have been found spasmodically closed, while the tubes themselves have been dilated by the accumulated urine, the increased dilatation sometimes extending to the pelves of the kidneys. Care must be taken not to confound spasm with inflammation of the bladder; in the latter the pain is constant, lancinating, and throbbing; and there is also general fever, and great disturbance.

Causes.—Stone in the bladder is one of the most frequent causes of violent paroxysms of spasm; malignant tumors of the bladder also produce them, and they are not uncommon in diseases of the rectum and uterus. Dr. Prout says that spasm of the bladder may arise from the presence of abnormally acid urine, as in gout, or from an abscess of the kidney, or from ulceration or other organic diseases of the bladder, prostate gland, &c., or from the use of irritating diuretics, as cantharides; from excessive venery; from hysteria; and from disorders of the intestinal canal, especially, perhaps, from the irritation of ascarides.

Treatment.—Two indications present themselves, viz., the immediate relief of the spasm, and the removal of the cause. The first will be best accomplished by the hot bath, or by fomentations until a bath can be obtained, and by the administration of a full dose of opium either by the mouth or by the rectum. The removal of the cause

is more difficult. Where the patient is gouty and the urine loaded with lithates, colchicum will do much good; and at the same time attempts may be made to induce an attack of gout in the foot, by the application of sinapisms, or by the use of stimulating pediluvia. In abscess of the kidney, the symptoms must be palliated as they arise, and the strength kept up by mild nourishing food, change of air, &c. When a calculus is present, a physician can only give temporary relief until a surgeon takes the necessary steps to crush or extract it. Supposing the spasm to be due to sympathy with a contiguous organ the disease of which cannot be removed, frequently repeated doses of the *tinctura ferri sesquichloridi* often prove of great service. Camphor mixed with a linseed poultice and applied to the perineum, is also said to be frequently serviceable; but the quickest relief will be obtained from an opiate enema.

In all cases the diet is to be regulated. Simple nourishing food, an avoidance of all stimulants, and a free supply of mild mucilaginous drinks should be ordered. The patient should also wear flannel next to the skin, to protect himself from sudden changes of temperature; and should avoid all violent exercise.

13. PARALYSIS OF THE BLADDER.

The muscular coat of the bladder may become paralyzed from some influence confined to this viscus; or from disease of the nervous centres, inducing loss of muscular power in other parts of the body; or from constitutional debility arising from any cause.

Symptoms.—Unlike the rectum, the bladder retains its contents when paralyzed; this phenomenon being due to some peculiarity in the neck of the bladder not possessed by the rectum. The sphincter vesicæ consists only of pale muscular fibres mixed with elastic tissue placed round the neck of the bladder; the elastic tissue modifying materially the action of the muscle. "The same loss of power," says Mr. Coulson, "which allows the escape of fecal matter through the paralyzed sphincter ani, does not affect to a

cially should he be cautioned always to withdraw every drop of urine, since that which is retained may, after a time, become decomposed, and not only contaminate the fresh secretion as it flows from the uterus, but also give rise to most serious changes in the mucous and other coats of the bladder. The catheter should be passed about every six hours. To restore the contractile power of the bladder various remedies have been recommended. In recent cases the use of the catheter occasionally suffices to give tone to the vesical walls; sometimes cold water injections, as recommended by M. Civiale, are beneficial; and good results are, in some instances, to be obtained from small doses, the one-twelfth of a grain twice daily, of strychnine, or from the use of the ergot of rye. Galvanism, cold douche and hip-baths, blisters over the lower part of the spine, and aloetic purgatives, are also remedies that may be often resorted to with advantage.

When there is disease of the brain or spinal cord, we can seldom hope to do much good beyond taking care that the bladder does not become distended, and attempting, as far as possible, to combat the symptoms as they arise.

14. INFLAMMATION OF THE BLADDER.

Acute inflammation of the bladder is a severe disease, which occurs under a variety of circumstances—the morbid action is generally confined to a portion of the mucous surface, the neck and bas-fond being the parts most frequently affected; but in severe cases the whole bladder and all its coats are attacked. It may arise as an idiopathic affection: in the great majority of cases, however, it supervenes on long existing chronic inflammation; or it is caused by the extension of inflammation from some of the pelvic viscera; or it is produced by external violence, as by wounds, &c.; or it is due to the irritation of some foreign body, as a calculus.

Symptoms.—The symptoms of acute cystitis are—pain over the bladder, heat of the urethra, a constant desire to pass urine which is voided in very small quantities, high fever, nausea, mental depression, and general constitutional

disturbance. The bladder can often be felt on making pressure over the lower part of the abdomen, as a small, rounded, tender tumor. The pain is usually very severe; it extends along the perineum and urethra, and down the thighs; and it is much increased by pressure upon the lower part of the abdomen, or by examining the posterior wall of the bladder through the rectum. Moreover, it diminishes in severity directly the bladder is emptied; but as soon as a small quantity of urine collects, the pain recommences, becoming more and more severe, until the desire to micturate becomes so irresistible, that the patient is compelled to respond to it. Frequently the irritation extends to the rectum, and the sufferer is annoyed with tenesmus.

Unless the progress of the inflammation be controlled in the course of two or three days, the pain becomes unbearable, the calls to micturate are constant, the urine is expelled in drops, and the walls of the bladder lose their power, so that an accumulation of urine takes place; while, at the same time, the constitutional disturbance rapidly increases, great prostration ensues, cold clammy sweats cover the body, the pulse becomes very feeble, low muttering delirium sets in, and death relieves the sufferings about the seventh or eighth day. In less violent cases, resolution sometimes takes place, and the patient recovers; or the inflammation, if limited in extent, ends in softening of the mucous membrane and ulceration, and gives rise to much pain and disturbance subsequently.

Treatment.—The remedies mainly to be relied upon are those which have been recommended in the inflammatory affections of other organs; especially opium, hot fomentations, and warm baths. The mildest aperients must be employed to keep the bowels open; a catheter must be used frequently if there are any symptoms of retention of urine, but not without; and the diet should be very light, with only a small quantity of fluids. In short, our object must be to keep the bladder as quiet as possible.

SECTION IX.

DISEASES OF THE SKIN.

THE systematic classification of cutaneous diseases which it is proposed to adopt in these pages, is that of Willan, considerably modified. It is as follows :—

- ORDER 1. *Exanthemata*.—Erythema; erysipelas; roseola; urticaria.
- ORDER 2. *Hæmorrhagia*.—Purpura; scurvy.
- ORDER 3. *Vesiculæ*.—Sudamina; herpes; eczema.
- ORDER 4. *Bullæ*.—Pemphigus; rupia; button scurvy.
- ORDER 5. *Pustulæ*.—Ecthyma; impetigo; equinia.
- ORDER 6. *Parasitici*.—Tinea tonsurans; tinea favosa; tinea decalvans; tinea sycosis; plica polonica; chloasma; scabies.
- ORDER 7. *Papulæ*.—Lichen; prurigo.
- ORDER 8. *Squamæ*.—Lepra; psoriasis; pityriasis; ichthyosis.
- ORDER 9. *Tubercula*.—Elephantiasis; molluscum; acne; lupus; frambæsia; keloid.
- ORDER 10. *Maculæ*.—Nigrities, lentigo, ephelis; albinismus, and vitiligo.

ORDER 1. EXANTHEMATA.

The exanthemata consist of variously formed superficial reddish patches, varying in intensity and size, disappearing under pressure, and terminating in resolution or desquamation. They are frequently complicated with gastrointestinal irritation or inflammation, and with cerebral or pulmonary diseases. This order includes erythema, erysipelas, roseola, and urticaria.

a. ERYTHEMA is a non-contagious affection, characterized by slight superficial red patches, irregularly circumscribed,

of variable form and extent, and most frequently seen on the face, chest, and extremities. Its duration varies from a week to a fortnight; it is seldom preceded or accompanied by febrile symptoms; it causes but slight heat, and no pain, and the prognosis is always favorable. The principal species of this disorder is known as *erythema nodosum*, in which the eruption is confined to the fore part of the leg, taking the form of one or more large oval patches, running parallel to the tibia, and rising into painful protuberances, much resembling nodes. It occurs commonly in young women when badly nourished or overworked.

The *treatment* is very simple. A few doses of some mild saline aperient; warm baths; attention to the digestive organs; light diet; and tonics, especially quinine, or the compound tincture of bark, or the mineral acids, are sufficient for the cure of all forms of this affection.

b. ERYSIPELAS, called in Scotland the *rose*, in this country *St. Anthony's fire*, is an inflammatory affection of the skin, and very commonly of the areolar tissue, characterized by the affected part becoming of a deep red color, hot, painful, and swollen. No portion of the surface is exempt from attacks of it, but the integuments of the face and head are most commonly the seats of *idiopathic* erysipelas, that which arises from internal causes; while *traumatic* erysipelas, that which follows wounds, may occur on any part.

Idiopathic erysipelas resembles the eruptive fevers, inasmuch as it is preceded by fever and general constitutional disturbance. It often sets in with chilliness, followed by distinct rigors; sore throat is an early and frequent accompaniment of it; disturbance of the cerebral functions, nausea, vomiting, and diarrhoea, may also be present. Then, on the second or third morning from the rigor, redness and swelling appear on some part of the skin, frequently on one side of the nose, spreading to the rest of the face, and often extending over the scalp, neck, and shoulders. The lips swell, the cheeks enlarge, the eyes become closed by their puffy lids, and all traces of the *natural features* are completely lost. After three or four

days, the redness fades, the swelling subsides, and the cuticle desquamates. In most cases, the inflammation is merely superficial; occasionally, it affects the subcutaneous areolar tissue—phlegmonous erysipelas—and is then apt to be followed by suppuration and sloughing.

Erysipelas may prove fatal by the extension of the inflammation to the brain or its membranes, giving rise to effusion and coma. The same result may occur from the mucous membrane of the glottis becoming affected, so that the chink gets closed, and the patient dies unexpectedly from suffocation. In other cases, death is owing to failure of the vital powers. Erysipelas may arise from infection or from contagion. When it prevails epidemically, as it sometimes does, intemperance, insufficient food, foul air, and trifling injuries, favor its occurrence.

The *treatment* must be conducted on the principle that we cannot cut short the disorder, but only lead it to a safe termination. At the commencement, an active purgative, such as a full dose of the neutral salts, will be beneficial. In the country, when the patients are young and vigorous, bleeding is commonly considered necessary; in London, such practice would almost invariably be bad. In the cases which have fallen under my own notice, there has always been marked evidence of debility; and I have consequently followed the practice of those physicians who adopt a tonic mode of treatment as the great rule in idiopathic erysipelas. The late Dr. Robert Williams, of St. Thomas's Hospital, gave all his erysipelatous patients milk diet, sago, very gentle purgatives, and from four to six ounces of port wine daily, from the very first appearance of the disease, irrespective of the symptoms or the part affected; and he says, in his admirable work on Morbid Poisons, "I have pursued this system for several years, and I hardly remember a case in which it has not been successful." The sesquicarbonate of ammonia (F. 331) will often prove an excellent substitute for wine.

Of all the local applications which have been recommended, that which gives the most relief is the fomentation by flannels wrung out of a hot decoction of poppy-heads, *assiduously* applied. Flour freely dusted over the inflamed

part has often a soothing, cooling effect in mild cases; but it is apt to form a crust, which adheres to and irritates the inflamed part.

In the phlegmonous form of the disease, when suppuration has taken place, and pus has become infiltrated through the areolar tissue, free incisions must be made to give it exit.

In *infantile erysipelas*, the strength must be supported. If the mother's milk be deficient in quantity or quality, a vigorous wet-nurse should be obtained. Cordials, as white-wine whey, wine and water, &c., must be given.

c. ROSEOLA is a non-contagious inflammation of the skin, characterized by transient patches of redness, of small size and irregular form, distributed over more or less of the surface of the body. The eruption, at first brightly red, gradually subsides into a deep roseate hue, and slowly disappears. It is accompanied by slight fever. There is one form of this affection which frequently affects adults, especially females, in the summer; it is called *roseola aestiva*.

But little *treatment* is usually necessary. Mild alteratives, laxatives, and tonics, may in some cases be required.

d. URTICARIA, or NETTLE-RASH, is a non-contagious exanthematous eruption, characterized by long prominent patches or wheals, either red or white, of irregular shape, of uncertain duration, and accompanied by intense heat, a burning and tingling in the affected spots, and great itching.

There are two varieties; one in which it is acute, running a short, rapid course; another in which it is chronic, very obstinate, and either persistent or intermittent. Both forms attack individuals of all ages and constitutions. The chronic intermittent variety is the *urticaria evanida* of Willan; it sometimes lasts for months, or even years.

Urticaria is caused by certain derangements of the digestive organs, arising from the use of particular articles of diet, such as shell-fish of different kinds, cucumbers, mushrooms, bitter almonds; certain medicines, as turpentine and balsam of copaiba, &c.

The *treatment* must consist in the administration of

emetics and purgatives where the disease depends upon stomach derangement. In the chronic form, a simple diet without wine, beer, or spirits, must be rigidly adhered to; laxatives, antacids, and warm or tepid baths, are the chief remedies. Steel (F. 345, 367) will sometimes effect a cure.

ORDER 2. HÆMORRHAGIA.

In this order the chief feature is the presence of crimson spots of variable size, caused by the rupture of capillary vessels; hence, as the blood is extravasated, the redness is unaffected by pressure. When the hemorrhagic spots are very small, they are termed *petechiæ*; when large, *vibices* or *ecchymoses*. There are two diseases in this order, viz., purpura and scurvy.

a. PURPURA.—Purpura consists of a morbid condition of the capillaries, owing to which blood is effused into the different tissues of the body, the effusion giving rise to the formation of sanguineous patches of various sizes.

The spots vary in color, being either red, purple, livid, or reddish-brown; they bear a great resemblance to bruises; pressure does not efface them. Five varieties are usually enumerated, namely, purpura simplex, purpura urticans, purpura hæmorrhagica, purpura senilis, and purpura cachectica. This disease must not be confounded with scurvy, which it somewhat resembles. It differs, however, inasmuch as it often appears suddenly, is not owing to any want of vegetable food, and is not attended by a livid, spongy taste of the gums.

As purpura is a disease of debility, the *treatment* must consist in the use of good diet; tonics will also be required, especially the mineral acids, quinine and iron, and acidulous drinks (F. 320, 321, 332, 334, 336, 345, 348, &c.). The oil of turpentine in small, frequently repeated doses has been strongly recommended (F. 95, 96.)

b. SCURVY.—Scorbutus, or scurvy, is a peculiar disease, caused by long-continued privation of fresh succulent vegetables.

Some authors speak of land scurvy and sea scurvy as if they were two different complaints. I believe them to be

identical. The same authorities have also regarded land scurvy and purpura as one and the same affection; there is little doubt but that they are very dissimilar.

The *symptoms* of scurvy show themselves gradually, commencing with lassitude, mental anxiety, and difficulty of breathing on the least exertion. The countenance becomes sallow and of a dusky hue; the gums swell, are spongy, of a livid color, and bleed on the slightest touch; the teeth loosen; and the breath becomes very offensive. As the disease advances, the debility increases; the dyspnoea often becomes most urgent; the gums frequently slough; and hemorrhages occur from the gums, mouth, nose, stomach, and intestines. Ecchymosis or effusions of blood beneath the skin also appear, especially on the lower extremities and trunk; many parts of the body become discolored with bruise-like marks, so that the patient appears as if he had been severely beaten. The legs swell; the skin is dry and rough; the urine is scanty; in some instances there has been spontaneous salivation; and there is generally constipation. Unless relieved, the patient dies from exhaustion.

Dr. Garrod believes that in scurvy the blood is deficient in potass, and that this deficiency is indeed the cause of the disease. He shows that all substances which act as antiscorbutics contain this agent, and he has rapidly cured cases by the use of some of its salts. These views have been lately confirmed by Dr. Hammond, who has cured and prevented the disease by the bicarbonate of potash, when fresh vegetables could not be obtained.*

The *treatment* usually adopted consists in the administration of those vegetables remarkable for their antiscorbutic qualities, such as oranges, lemons, potatoes, lime-juice, &c. If we believe in the soundness of Dr. Garrod's opinions, as indeed we are bound to do, we shall employ the tartrate, chlorate, or phosphate of potash (F. 59, 66, 70, 323, 367, &c.)

* American Journal of Medical Sciences, vol. li. 1853.

ORDER 3. VESICULÆ.

A vesicle is a slight elevation of the epidermis, containing a serous fluid, generally transparent, but occasionally opaque or sero-purulent. The fluid may be absorbed, or it may be effused upon the surface, causing excoriation and small thin incrustations. Vesicular eruptions are occasionally preceded by fever, but often appear imperceptibly; they give rise to a peculiar appearance, as if drops of water had been scattered over the surface of the skin. In this order we find three affections—sudamina, herpes, and eczema.

a. SUDAMINA.—In the progress of many acute and chronic diseases attended with sweating, crops of small transparent vesicles make their appearance. Thus, in acute rheumatism, typhoid fever, &c., sudamina are frequently found upon the trunk and extremities, especially in the latter stages of these affections.

Some authors speak of *Miliaria* as a distinct fever, arising from constitutional causes, and differing from sudamina produced by copious sweating. The distinction—if it exist—is unimportant, since the vesicles in both cases resemble each other, and disappear spontaneously without requiring any treatment.

b. HERPES.—Herpes, or tetter, is a transient non-contagious affection, consisting of clusters of vesicles upon inflamed patches of irregular size and form. The eruption runs a definite course, rarely continuing for more than two or three weeks; it is not usually severe, nor is it accompanied by any constitutional symptoms. Care must be taken not to mistake its nature, since *herpes præputialis* has been actively treated as syphilis, and *herpes circinatus*, when occurring on the scalp, as *tinea tonsurans*, or ring-worm. A singular species of this disease is *herpes zoster*, or *zona*, or the *shingles*, in which the inflamed patches with their clustered vesicles are arranged in the form of a band, encircling half the circumference of the body; in nineteen cases out of twenty the zone will be found to occupy the right side of the body.

Very little is necessary in the way of *treatment* beyond attention to the bowels, and regulation of the diet. The local irritation may be relieved by the application of zinc ointment, or the diacetate of lead, cerate of the Pharmacopœia.

c. ECZEMA.—Eczema, crusta lactea, humid tetter, or scall, is a non-contagious disease, consisting of an eruption of small vesicles on various parts of the skin, closely crowded together, and often running into each other, so as to form, on being ruptured, superficial moist excoriations. There are several species of this disease. When the eruption consists of minute vesicles on different parts of the skin, without any inflammation, it is called *eczema simplex*; when the skin is inflamed, and there is heat and swelling, *eczema rubrum*. *Eczema impetiginodes* is a severe degree of *eczema rubrum*. When arising, as it sometimes does, from great heat, especially from the heat of the sun, it is called *eczema solare*; when as a result of the use of mercury, *eczema mercuriale*. In infants at the breast, and in children during dentition, it often affects the scalp—*eczema capitis*.

Treatment.—All the varieties are often obstinate, and resist the power of medicines. Mild local applications, such as thin gruel, barley-water, or linen rags dipped in warm water and covered with oiled silk, are useful. I have found glycerine, or a lotion of glycerine and water, in equal parts, very beneficial. The carron oil (F. 252) has been recommended. The general treatment must consist in the use of warm or tepid baths, saline laxatives, slightly acidulated drinks, opiates to relieve the irritation, sarsaparilla, the mineral acids, &c. In severe or chronic cases the iodide of potassium, or the liquor potassæ arsenitis, should be tried (F. 23, 26, 41, 42).

ORDER 4. BULLÆ.

As a general rule, bullæ differ from vesiculæ merely in being larger; and hence it is almost unnecessary to separate them into two orders; they are small superficial tumors, caused by effusions of serum beneath the epidermis.

Pemphigus and rupia are the two eruptions which are classed under this denomination, according to Willan; but Dr. Burgess has judiciously added button scurvy.

a. PEMPHIGUS.—This affection is characterized by the appearance of large bullæ, two or three inches in diameter, upon one or more regions of the body. The eruption is generally preceded for twenty-four or forty-eight hours by slight general indisposition, fever, and itching of the skin; small red circular patches then form, gradually increase in extent, and become covered with bullæ, which either fade away on attaining their full size, or burst, and are replaced by thin brownish-colored incrustations. The duration of this disease is usually from one to three weeks, although it occasionally becomes chronic and prolonged for months.

Pompholyx is merely a variety of pemphigus, unattended with fever, and running its course in eight or ten days; it is very rare. A kind of artificial pompholyx may be produced by the application of cantharides. I remember a young woman in King's College Hospital who deceived her physician for a short time by rubbing powdered cantharides into various parts of her person, and thus raising numerous small blisters.

Treatment.—Tonic and alterative medicines, with generous diet and fresh air, appear to be the remedies called for (F. 20, 23, 26, 46, 58).

b. RUPIA.—Rupia may be considered as a modification of pemphigus occurring in persons of debilitated constitutions, and in those whose systems have been contaminated with the poison of syphilis. It is characterized by the eruption of small flattened bullæ, containing at first serous fluid, which soon becomes purulent or sanguinolent, and concretes or dries into dark, black, rough crusts. When the crusts fall off they leave circular ulcers, of various sizes, indisposed to heal. The lower extremities are most frequently affected. Its duration varies from two or three weeks to several months.

Warm baths, generous diet, wine, bark, and other tonic medicines, followed by change of air, will form the *treatment* to be pursued. In syphilitic rupia iodide of potassium (F. 23, 26) will generally effect a cure.

c. **BUTTON SCURVY.**—*Ecphyma globulus*, or button scurvy, as it is popularly misnamed, is a singular cutaneous disease prevalent in the middle and southern counties of Ireland. "This disease," says Dr. Burgess, "is characterized by an eruption of one or more scattered excrescences on different parts of the body, each of which in form resembles a convex button—hence its name—and varies in size from four or five-tenths of an inch to an inch and a quarter in diameter. It is highly contagious (through the medium of the fluid secreted by the excrescence), and is described by some writers, erroneously, as confined to the cuticle. It is not a syphilitic disease; although sometimes bearing a resemblance to the syphilitic condylomata described by Fricke."* It is generally unattended by constitutional symptoms; being merely a local affection, as is clearly proved by the ease with which the application of the nitrate of silver usually cures it.

ORDER 5. PUSTULÆ.

The pustular affections of the skin are characterized by the formation, between the cuticle and cutis vera, of small tumors containing purulent fluid, called pustules. The pustules are sometimes scattered irregularly, sometimes united in clusters; they are succeeded by scabs, and frequently by permanent cicatrices. The diseases of this class are—ecthyma, impetigo, and equinia.

a. **ECTHYMA.**—Ecthyma is an acute inflammation of the skin, characterized by large, round, prominent pustules, occurring upon any part of the body. The pustules are usually distinct, seated upon a hard inflamed base, and terminate in thick dark-colored scabs, which leave superficial ulcers, followed by cicatrices. It is often caused by different stimulating applications to the skin, such as lime, salt, sugar, &c. Grocers and bricklayers are subject to it.

Treatment.—This must consist in the use of gentle laxatives, with alteratives, slightly acid drinks, and spare diet.

* Burgess's translation of Cazenave's *Manual on Skin Diseases*. Second edition, p. 160. London, 1854.

Water-dressing, or the lotio plumbi, or the unguentum zinci, may be applied to the pustules.

b. IMPETIGO.—Impetigo is a severe non-contagious inflammation of the skin; characterized by an eruption of small hemispheroidal or flattened pustules, most frequently grouped in clusters, and forming thick, rough, yellowish scabs or incrustations. From beneath the incrustations a discharge takes place; the crusts become thicker and larger; and fall off, leaving a raw surface. The mode of distribution of the pustules has caused a division of the disease into two varieties—*impetigo figurata* and *impetigo sparsa*. The first occurs generally on the face, especially on the cheeks; it is attended with constitutional disturbance; and as the pustules burst and form scabs, the heat and itching become intolerable. In children the impetiginous eruption sometimes covers the face like a mask, and is called *crusta lactea*. The second form merely differs from the first, inasmuch as the pustules are more scattered, being sometimes distributed over the entire limb, or even over the whole body.

Treatment.—When there is much inflammatory action, the patient must be kept very quiet, on a light diet, and with a free supply of diluents. The bowels must be kept open by saline purgatives. The best local applications are lotions containing the oxide of zinc, or hydrocyanic acid (F. 249, 256, 257); dusting the affected part with the oxide of zinc is often very useful. Vapor or warm-water baths are always beneficial. The constitutional treatment must consist in attention to diet, mild laxatives, alkalies, and tonics (F. 65, 66, 69, 329, 354, 367, &c.)

c. EQUINIA.—Equinia, Farcinoma, Farcy, or Glanders, is attended by *symptoms* somewhat similar to those of glanders in the horse; by fever, great debility, pains in the limbs, profuse offensive discharge from the nostrils, and the formation of a number of pustules and tumors in different parts of the body, which have a great tendency to suppurate and become gangrenous. The pustular eruption does not occur until about the twelfth day; it is accompanied by profuse fetid sweats, and sometimes by the formation of *black bullæ*. The disease generally proves fatal before the

twentieth day. It occurs for the most part in grooms, stable-men, &c. There is abundant proof of the transmission of the glanders from the horse to man.

No treatment seems hitherto to have been of any service. I can only recommend stimulants, and a trial of the salts of potass, especially the chlorate (F. 59, 66).

ORDER 6. PARASITICI.

The order Parasitici must be divided into two groups; according as the parasite belongs to the vegetable or animal kingdom. The cutaneous affections depending on a parasitic plant are: *Tinea tonsurans*, *Tinea favosa*, *Tinea decalvans*, *Tinea sycosis*, *Plica Polonica*, and *Chloasma*; while the disease produced by a parasitic insect is *Scabies*. All are contagious.

a. *TINEA TONSURANS*—is a chronic contagious disease, known by the decolorization and brittleness of the hairs, the scaly eruption, and the roundness of the diseased patches. It is called *porrigo scutulata* by Bateman and Willan, and vulgarly ringworm. The parasite is the *Trichophyton tonsurans*.

b. *TINEA FAVOSA*—most commonly affects the scalp, in the form of small, cup-shaped, dry, yellow crusts, each containing a hair in its centre, and somewhat resembling a piece of honeycomb; it is contagious. It is termed *porrigo favosa* by Willan and Bateman. The parasitic plant causing or accompanying it is the *Achorion Schönleini*.

c. *TINEA DECALVANS*—the third variety—is easily diagnosed. The hair falls off one or more circular spots, leaving a perfectly smooth bald patch; it is usually known as *porrigo decalvans*. The parasitic fungus is the *Microsporon Audouini*.

d. *TINEA SYCOSIS*.—The last species of tinea is characterized by inflammation of the hair follicles, causing successive eruptions of small, acuminate pustules, occurring most frequently upon the chin and other parts occupied by the beard; it rarely occurs on the scalp, and rarely affects women. It is called *mentagra* by Willan and Bateman,

and sycosis by Cazenave. The parasite is the *Microsporon mentagrophytes*.

Treatment.—This is the same in all the varieties of tinea, and consists in attention to cleanliness, removal of the hair with the scissors, separation of scabs or incrustations by poultices, improvement of the general health, and the destruction of the parasitic plant. By the latter proceeding, the disease will in most cases be cured. It is best effected by the application of sulphurous acid, for the introduction of which agent into practice we are much indebted to Dr. Jenner* (F. 254).

e. PLICA POLONICA.—Plica Polonica, or trichosis plica, is a disease of the hair little known in this country. It is characterized by tenderness and inflammation of the scalp; the hairs become swollen and imperfectly formed, and the hair follicles secrete a large quantity of viscid, reddish-colored fluid, which glues the hairs together, uniting them into a mass. It is caused, or accompanied by two parasitic planes, the *Trichophyton tonsurans* and *Trichophyton sporuloides*. As regards the treatment of this disease little is known, but it is usually recommended that the diseased hairs should not be cut. I should be strongly inclined to advise gentle douches of warm water daily, with the constant use of the sulphurous acid lotion, so beneficial in analogous diseases (F. 254).

f. CHLOASMA.—Chloasma, pityriasis versicolor, or liver spot, makes its appearance generally on the front of the chest or abdomen, in the form of small spots of a dull reddish color, which gradually increase in size, and assume a yellow tint. It may last from a few days to many months or years. It is contagious. According to Eichstedt, this disease is caused by a cryptogamic plant—*Microsporon furfur*. It may be cured by the use of the sulphurous acid lotion, or by a lotion of bichloride of mercury in water (gr. ij to ʒj), applied night and morning. Mr. Startin considers that it is apt to return, if an arsenical course be omitted; hence in obstinate cases this remedy may be resorted to (F. 41, 42). I have, however, cured cases by

* Medical Times and Gazette, 20th August, 1853.

the mercurial lotion alone, continuing its use for a short time after the disappearance of the eruption.

g. SCABIES.—Scabies, or psora, or the itch, is a contagious disease—contagious in that sense which implies contact—consisting of a vesicular eruption, presenting a number of watery heads, attended with violent itching. This affection may attack every part of the body, though it most frequently occurs in the flexures of the joints, especially on the fingers. It is often stated that scabies is never seen on the face; but this opinion is probably incorrect, for I am told that at the Hospital for Skin Diseases cases of its occurrence in this region are not uncommon. The cause of the disease is an insect called the *Acarus scabiei*, which is to be found about a line from, but not in, each vesicle. It must be killed by the free application of sulphur ointment, or the use of sulphur baths; and thus this loathsome disease will be cured. The contaminated clothes should be afterwards destroyed; or, at least, well fumigated with sulphurous acid gas, which may be procured by igniting a rag dipped in melted sulphur.

ORDER 7. PAPULÆ.

A papula or pimple is a small, solid, acuminated elevation of the cuticle, resembling an enlarged papilla of the skin, generally terminating in resolution or in slight desquamation, but sometimes in ulceration of its summit. Papular eruptions are usually preceded by itching; are rarely accompanied by fever; slowly formed; not contagious; developed on any part of the body; and varying in their duration from a week to several months. Lichen and prurigo are the diseases of this class.

a. LICHEN.—This is a papular affection readily recognized by the minute, hard, red elevations of the skin which it presents, together with the annoying pruritus. There are three forms.

Lichen simplex, in which the eruption consists of small, agglomerated papulæ, rarely larger than a millet seed.

Lichen streptulus, or red gum, tooth rash, &c., which

generally attacks infants at the breast, and is characterized by an eruption of minute, hard, sometimes slightly red pimples, attended with itching, and appearing upon part or the whole surface of the body.

And *Lichen agrius*, in which the papulæ are more inflamed, and developed on an erythematous surface, which appears hot and painfully distended. The itching is very intense, and the duration of this form is often very prolonged.

The *treatment* is simple; for tepid baths, mild laxatives, and acidulous drinks will cure most forms of lichen. The irritation will be best relieved by a weak lotion of the liquor plumbi diacetatis, to which a little hydrocyanic acid may be added; or by a lotion consisting of two ounces of glycerine, six grains of bichloride of mercury, twenty or thirty drops of chloroform, and six ounces of water.

b. PRURIGO.—Prurigo—itching—is a cutaneous disease characterized by an eruption of small papulæ or pimples, of the natural color of the skin. It is a chronic affection, lasting for months or years, and causing great discomfort, not to say misery. Patients afflicted with it scratch and tear themselves constantly till the blood flows; their sufferings are aggravated by warmth. Willan describes three varieties—*prurigo milis*, *prurigo formicans*, and *prurigo senilis*. The first is the mildest form; in the second, the itching is combined with a sensation like the creeping of ants or the stinging of insects; while the third occurs in old persons, and is the most obstinate, often continuing for the rest of the patient's life.

Diagnosis.—The itching arising from prurigo must not be confounded with that caused by insects. I may here mention that the human body is infested with three kinds of lice, viz., the *Pediculus vestimenti*, or *clothes' louse*; the *Pediculus capitis*, or *head louse*, which lives in the hair; and the *Pediculus pubis*, or *crab louse*, which infests the hair of the pubes. They are all destroyed by mercurial ointment, or by dusting the parts with calomel, or by washing them with infusion of tobacco.

Treatment.—Alkaline, or sulphur, or conium, or creasote (F. 119, 120, 121, 123), or even plain water baths,

should be used daily; the temperature should not exceed 70° Fahr. The local applications which give the most relief are vinegar, lime-water, a weak solution of bichloride of mercury, a dilute solution of creasote, a lotion containing prussic acid, an ointment containing a small quantity of aconitine, tar ointment, &c.

The general treatment must consist of a light and cooling regimen; the avoidance of stimulating food or drink; and the use of laxatives, sarsaparilla, acid tonics, or even the liquor potassæ arsenitis (F. 26, 41, 42, 46, 140, &c.).

Dr. Bowling, of Kentucky, says, in a letter to Dr. Watson, that he has cured numerous cases of obstinate prurigo senilis thus: I direct that the affected parts be sponged for a minute or so with good apple vinegar, and then be allowed time to dry. After this they are to be smeared over with citrine ointment (*unguentum hydrargyri nitratis*). The applications are to be made twice a day. The cure is usually effected in a week.

ORDER 8. SQUAMÆ.

The term squamæ is applied to the scales of degenerated, thickened, dry epidermis which cover minute papular elevations of the skin; they are readily detached, and are reproduced by successive desquamations for a long time. The scales or scurf are the result of a morbid secretion of the epidermis; their formation gives rise to but slight constitutional disturbance, and to mere local heat and itching; none of the squamous diseases are contagious, but they are very chronic in their duration. Lepra, psoriasis, pityriasis, and ichthyosis are the diseases included in this order.

a. LEPRA.—Lepra, or lepra vulgaris, is perhaps the most obstinate and troublesome of all cutaneous diseases. It is a non-contagious chronic eruption, consisting of red, scaly, circular patches, of various dimensions, scattered over different parts of the body, but more frequently found in the neighborhood of the joints, especially near the knee and elbow. By degrees the patches increase in

size and number, and extend along the extremities to the trunk.

When the patches are small, white, and of long standing, the disease is termed *lepra alphoides*; when copper-colored, and the result of syphilis, *syphilitic lepra*.

In the *treatment*, all local applications, with the exception of alkaline baths, or the simple warm bath, are useless. *Liquor potassæ*, in half-drachm or drachm doses, thrice daily, is often beneficial; or the *liquor potassæ arsenitis*, or the triple compound of iodine, arsenic, and mercury, known as Donovan's solution (F. 40, 41, 42), may be cautiously given with the greatest advantage. Where these remedies fail, the decoction of dulcamara, or decoction of sarsaparilla and bichloride of mercury, tar capsules, tincture of cantharides, or the iodide of potassium, may be tried; mercury will generally cure the syphilitic form. The Harrogate waters have been recommended. At the same time, the diet must be very simple, and all stimulating food or drink avoided. During an arsenical course, all acids, fruits, and vegetables should be abstained from.

b. PSORIASIS.—Psoriasis, *psora leprosa*; or dry tetter, is a chronic non-contagious inflammation of the derma; characterized by the development of patches of various extent and form, slightly raised above the level of the skin, covered by thin, whitish scales of altered epiderma, and accompanied by rhagades or fissures of the skin. The eruption may be local or it may be diffused over the whole body. The *local* varieties consist of—psoriasis palpebrarum, psoriasis labialis, psoriasis præputialis, psoriasis scrotalis, psoriasis palmaris, and psoriasis unguinum. The general varieties are—psoriasis vulgaris, psoriasis gyrata, and psoriasis inveterata.

Psoriasis is closely allied to lepra in its appearance and general pathology; in the former disease, the patches are irregular, and not depressed in the centre; in the latter, they are circular, and depressed in the centre, with elevated margins. Both affections are sometimes hereditary, and both require the same treatment.

c. PITYRIASIS.—Pityriasis is a chronic inflammation of

the skin, attended with redness and itching, and characterized by the production of minute white scales or scurf in great quantity. It may attack any region, but the scalp and parts covered with hair are the most common seats of it. The desquamation takes place copiously and incessantly. It is often very rebellious to treatment.

Treatment.—Some tonic infusion, an occasional purgative, and the use of alkaline lotions (F. 249, 257, 262) to the affected part. Occasionally the unguentum hydrargyri nitratis mitius does much good, applied daily. When the head is the part affected, the hair should be cut off close to the scalp, with a pair of scissors. Great cleanliness is, of course, essential.

d. **ICHTHYOSIS.**—Ichthyosis, the fish-skin disease, is characterized by the development, upon one or more parts of the integuments, of thick, hard, dry, imbricated scales of a dirty gray color, resting upon an uninflamed surface, and unattended by heat, pain, or itching. It is said to be a congenital disease, and to last during life.

Simple warm and alkaline baths may be employed as palliatives; no other *treatment* seems to be of any use. Donovan's triple solution (F. 40) might be tried.

ORDER 9. TUBERCULA.

The diseases belonging to this order—Elephantiasis, molluscum, acne, lupus, frambœsia, and keloid—are characterized by the formation of small hard tumors or tubercles, more or less prominent, circumscribed in form, and persistent; they may become ulcerated at the summit, or they may terminate in suppuration. Tubercular diseases are slowly developed, are very chronic, are almost peculiar to tropical regions, and their symptoms are so characteristic that their diagnosis is easy.

a. **ELEPHANTIASIS.**—There are two species of this disease; viz., Elephantiasis Græcorum, and Elephantiasis Arabicum.

Elephantiasis Græcorum is a terrible and dangerous disease; non-contagious, hereditary, and generally incurable. It is characterized by the appearance of patches of a purplish

color; succeeded by elevated tumors, having the same tint, irregular in shape and size, soft, smooth, and insensible to the touch, and which generally—after a certain time—become the seat of unhealthy ulceration. It is not met with in temperate climates; but there is found to be disposition to it as we approach the polar regions on the one hand, and the tropics on the other. Males suffer from it more than females. It is designated by the Jews *tsara'ath*.

Elephantiasis Arabicum is characterized by great swelling and induration of the skin and of the subjacent areolar and adipose tissues, producing marked deformity. It frequently attacks the lower extremities, causing great swelling so that the limb becomes double its natural size, hardness, severe pain, and an appearance resembling—it is fancifully said—the leg of an elephant. It is uncommon in Europe, occurring principally in the West Indies; it generally continues for life; causes alarming constitutional disturbance; is neither contagious nor hereditary; and attacks males and females, rich and poor indiscriminately.

b. MOLLUSCUM.—This affection—so called from the similarity of the tubercles characterizing it to the eminences growing on the bark of the maple tree—consists in the presence of small tumors; these varying in size from a pea to a pigeon's egg, being sometimes of a brown color, and sometimes growing from a broad base, and sometimes from a narrow peduncle. There are forms, one contagious the other not. Contagious molluscum is a very rare, severe, and chronic affection: Bateman saw two cases only. Non-contagious molluscum is less severe, and does not produce as much irritation as the opposite kind; after a time the tumors neither grow nor alter, but remain stationary for life.

c. ACNE.—Acne, or gutta rosacea, or coppernose, is a chronic pustular affection; characterized by small pustules with a deep red base, leaving behind small, hard, red tumors, the seat of which appears to be the sebaceous follicles of the skin.

Willan describes three varieties of this disease—acne simplex, acne indurata, and acne rosacea; the characteristic distinctions of which are indicated by their names.

Acne simplex and *acne indurata* are most common about the period of puberty, appear on the forehead or sides of the cheeks, are very protracted in their duration, and often leave indelible cicatrices; *acne rosacea* attacks the nose, is often connected with some stomach or liver disease, and is mostly seen in persons of advanced years, especially in *bons vivants*, &c. In the *treatment* of all the forms, the diet must be restricted, stimulants of all kinds abstained from, and mild laxatives occasionally employed. The iodide of sulphur ointment (F. 308) sometimes does good in *acne indurata*; and so does warm bathing.

d. *LUPUS*.—Lupus is a most formidable affection. Dr. Burgess, in his excellent translation of Cazenave, says that it commences with purple and red spots, or more frequently livid indolent tubercles, the chief character of which is their tendency to end in destructive ulceration of the surrounding parts. There are two varieties of this disease, *lupus non exedens*, and *lupus exedens*—or *noli me tangere*. In the *first* there is no ulceration, yet the tubercles leave deep cicatrized pits behind them; when it spreads rapidly and superficially, it leaves the skin crossed by white scar-like ridges and bands. The *second* is very destructive; it attacks the nose more frequently than any other region of the body, though why it does so is unknown. The extent of parts which it destroys varies; sometimes the whole nose being eaten away, sometimes only the point.

Treatment.—A prolonged course of the liquor hydriodatis arsenici et hydrargyri, or of the liquor potassæ arsenitis, or of the bromide of mercury, or of iodide of potassium in decoction of sarsaparilla, is necessary in both varieties (F. 21, 26, 40, 41, 42).

As a local remedy in *lupus non exedens*, Mr. Wilson recommends the occasional application of the acetum cantharidis, made with strong acetic acid. In *lupus exedens*, chloride of zinc, or potassa fusa, or nitric acid, must be used to destroy the ulcerated surface, and excite the capillaries to a more healthy action.

e. *FRAMBÆSIA*.—Frambæsia, or pian, or yaws—in Guinea, is rarely met with in Europe, but is common in *Africa*, *America*, and the West Indies. Without any pre-

cursory symptoms, parts of the skin—especially about the face, scalp, axillæ, or genital organs—become covered with small dusky-red spots, which gradually become converted into larger tubercles, isolated at their summits, but collected together at their bases, and often resembling raspberries or mulberries in their color and form. The tubercles are generally hard, covered with dry scales, and are sometimes inflamed; if the inflammation spreads, ulceration sets in, and a yellow sanious discharge results, which forms scabs around the tumors. The disease continues for years, or even for life.

f. KELOID.—Keloid, cheloidea, or cancroide, was first described by Alibert under the above names; owing to the disease presenting a flattish raised patch of integument resembling the shell of a tortoise. This affection forms small, flat, painful tumors, one or two inches in diameter, raised a few lines above the level of the skin, having irregular forms, slight depression in their centres, and being covered with wrinkled epidermis. Sometimes there is only one tumor, sometimes several; the disease is developed slowly, rarely ends in ulceration, often disappears spontaneously merely leaving a cicatrix, is usually found on the chest between the mammæ, and is very uncommon.

ORDER 10. MACULÆ.

This order of cutaneous diseases is characterized by certain changes of color in parts of the skin—giving rise to spots of various appearance and size—or in the whole of the cutaneous envelop. The maculæ are seated in the rete mucosum and depend on some alteration of its coloring matter; they are generally incurable; are unattended by any derangement of health; and they may be divided into two classes, those attended by *change* of color, and those marked by *absence* of color.

a. CHANGES OF COLOR.—The skin sometimes becomes of a bronze or slate color, as may occur, either after the long-continued use of nitrate of silver, or naturally without any appreciable cause. The bronzing of the skin, which occurs in disease of the supra-renal capsules, is probably

one form of this affection. The change is generally permanent. It is termed *Nigrities* when the color is very dark.

Lentigo, or *Freckles*, or *Sunburn*, is generally congenital, the spots mostly cover the parts of the body exposed to light. Freckles are more common in the fair than the dark complexioned; are sometimes excited by the sun; and are most common in warm countries.

Ephelides are yellow irregular spots, which sometimes appear temporarily on the chest, abdomen, and groins, from errors in diet, &c.

b. **Loss of COLOR.**—The absence of the coloring matter of the skin may be congenital or accidental.

In *Albinismus* the skin is of a dull white, milky color; the body is covered with a woolly white down; and the eyebrows, eyelashes, and hairs generally are smooth, silky, and white. The iris is of a rose color, and the pupils present a deep red appearance, owing to the absence of pigment in the choroid and uvea. The albino is generally weak-minded, and of a delicate constitution; he is found amongst all the races of mankind.

When the skin is the seat of a partial discoloration, congenital or accidental, the affection is known as *vittiligo*. The discoloration may appear on any part of the body in the form of smooth, milky-white colored patches; when it occurs on the scalp it causes baldness. It may occur at all ages, and it generally lasts for years.

SECTION X.

DISEASES OF THE EYE.

1. IMPAIRED VISION.

a. MYOPIA.—Myopia, or Near Sight, most frequently arises from too great a convexity of the cornea or of the crystalline lens, or of both. An undue density of any or of all the refractive media may also cause it. Myopia is usually congenital; it may, however, be gradually or even suddenly induced. It occurs most frequently in the higher ranks of life. In confirmed cases, double concave glasses or spectacles must be worn; single eye glasses are bad. The glasses had better not be worn constantly, but only when especially required.

b. PRESBYOPIA.—One of the earliest indications of advancing years is an alteration in the refractive powers of the eyes, producing presbyopia, or long sightedness. Mr. White Cooper enumerates the following structural changes in the eye as giving rise to this state: 1. A flattening of the cornea, from a diminution in the bulk either of the aqueous or vitreous humors, or of both, the result of defective secretion. 2. An alteration in the consistence and diminution in the convexity of the crystalline lens. 3. Diminished density of the various humors. 4. Diminished curvature of the retina, which, existing while the vertical diameter of the globe remains about the same, prevents the refracted rays that enter the flattened cornea from forming a picture upon the retina. Which-ever of these may exist, the effect is to cause the converging rays of light to be brought to a focus beyond the retina, and so to produce an imperfect and confused picture. Distant objects, however, are still seen distinctly, *since the rays which proceed from them require less re-*

fractive power to bring them to a focus by the time they arrive at the retina; the difficulty is in discerning close objects. Double convex glasses should be used. The eyes should be spared by artificial light. Where the sight is *weak*, relief will often be obtained by wearing spectacles with glasses of a neutral tint.

c. **ASTHENOPIA.**—Asthenopia, or weakness of vision, is a common affection; especially among the poor and ill fed work-people of large cities who lead sedentary lives. Children who are confined too closely to their books also suffer from it. The *treatment* is such as common sense dictates: that is to say, tonics, good nourishing food, relaxation from toil, and exercise in the open air.

2. INFLAMMATION OF THE CONJUNCTIVA.

a. **CATARRHAL OPHTHALMIA.**—This affection is a mild form of inflammation of the conjunctiva and Meibomian follicles; and is the most common of all diseases of the eye, being caused by exposure to cold and wet, vicissitudes of temperature, &c. The pain is slight; the patient complaining most of stiffness and dryness, and of a feeling of pricking or roughness of the eye, as if sand or broken glass was under the upper eyelid. This sensation is caused by the rubbing of the sensitive eyelids over the enlarged vessels of the sclerotic conjunctiva. These vessels are seen to be of a bright scarlet color, and irregularly arranged; differing thus from the appearance of the vessels in sclerotitis, in which they are of a pink hue, and disposed straight and regularly, like radii in a circle. The natural secretion from the conjunctiva and Meibomian follicles is increased in quantity, and often becomes puriform.

Treatment.—Catarrhal ophthalmia yields readily to simple treatment, and often terminates favorably without the employment of any remedies at all. At the outset, the patient may be purged with calomel and jalap, or with the common blue pill and black draught. Local astringent remedies should then be used. Dr. Mackenzie recommends a solution of nitrate of silver (gr. iv to 3j); a large drop to be placed in the eye twice or thrice daily. Some prac-

tioners employ the same remedy as an ointment, in the proportion of gr. xx to ʒj.

b. PURULENT OPHTHALMIA.—This is the same disease as the foregoing, only much more severe, and consequently of a more destructive tendency. There are three kinds of purulent ophthalmia, viz., purulent ophthalmia of adults, or contagious ophthalmia, or Egyptian ophthalmia; gonorrhœal ophthalmia; and the purulent ophthalmia of infants.

In *purulent ophthalmia of adults*, the inflammation is very intense, runs a rapid course, is attended with violent pain, and leads to the formation of large quantities of thick, yellow, purulent matter. At the same time, effusion takes place into the areolar tissue between the sclerotic and conjunctiva, as well as into that between the conjunctiva and palpebræ, producing great tumefaction or *chemosis*, so that the globe of the eye can hardly be seen. Where the disease does not yield, the inflammation increases, attacks the cornea, and occasionally the internal textures of the eye; extensive sloughing takes place, and when the sufferings terminate, it is found that the sight is completely lost.

This affection is contagious, is frequently epidemic, and is common in hot climates. Military life appears especially to predispose to it. Both eyes are often affected, and sometimes simultaneously.

Gonorrhœal ophthalmia differs from the Egyptian form in a few points only. Thus, it is limited usually to one eye, is, perhaps, the most severe disease of the two, and is caused by contact of the gonorrhœal, or even leucorrhœal, discharge with the conjunctiva.

The *purulent ophthalmia of infants*, or *ophthalmia neonatorum*, generally commences about the third day after birth, with inflammation of that part of the conjunctiva lining the palpebræ. The edges of the eyelids adhere, and on separating them a drop of thick white fluid escapes. As the inflammation extends to the conjunctiva covering the eyeball, the eyelids swell, the purulent discharge increases, and the child becomes very feeble, restless, and fretful. The disease may remain in this state for eight

or nine days; if not then relieved, ulceration of the cornea occurs, and those destructive consequences ensue which have been already referred to. Both eyes commonly suffer, either at the same time, or within an interval of a few days. The discharge is contagious.

Treatment.—The treatment of the *purulent ophthalmia of adults* and of *gonorrhœal ophthalmia* is the same, and consists in checking the inflammation by perfect rest in a darkened room, by hot fomentations, by the use of mercurial purgatives, and the employment of local astringents. Dr. Mackenzie, Mr. Guthrie, and other authorities, state that general or local bleeding is often required; but the practitioner must use his own judgment on this point. Mr. Guthrie's plan consisted in the employment of moderate depletion, with the daily use of an ointment, made by mixing ten grains of nitrate of silver with one drachm of lard. Before inserting a portion of this beneath the eyelids, the discharge is to be washed away with a solution of alum. The pain arising from the application must be relieved by warm narcotic fomentations and opium. To prevent the lids from adhering, the edges should be smeared at night with the unguentum hydrargyri nitratis mitius.

To cure the *purulent ophthalmia of infants*, it will be necessary to keep the child's bowels freely open by castor oil, magnesia, or a few grains of gray powder with magnesia or Dover's powder (F. 34, 36), according to the strength of the patient and the degree of restlessness. A warm bath night and morning will be useful. The eye must be frequently bathed with tepid water, and a solution of alum (gr. v to ʒj) injected between and beneath the lids twice or thrice in the twenty-four hours. Occasionally, a lotion of nitrate of silver (gr. iv to ʒj), applied once daily, will be more efficacious than the alum.

c. STRUMOUS OPHTHALMIA.—This form of ophthalmia is a disease of scrofulous children, occurring generally between the period of weaning and the ninth and tenth year. Its principal *symptoms* are slight partial redness, with the formation of little phlyctenæ or pustules on the *conjunctiva*, a copious lachrymal secretion, and great in-

tolerance of light; both eyes are usually affected. The hot tears flowing over the cheek often produce an eruption resembling *crusta lactea*.

The *treatment* of these cases must be chiefly constitutional. In addition to good nourishing food, warm clothing, and fresh air, mild laxatives, cod-liver oil, and tonics are necessary; of the latter, steel, and especially quinine, are the best (F. 341). Warm fomentations give great relief; wearing a green shade will also be useful. When the most acute symptoms have subsided, local stimulants, such as the *vinum opii*, or the solution of nitrate of silver (gr. ij to 3j) may be employed; benefit is often derived from small blisters behind the ears, or to the nape of the neck.

3. INFLAMMATION OF THE SCLEROTICA.

a. RHEUMATIC OPHTHALMIA.—Rheumatic ophthalmia, or scleritis idiopathica, may be defined as inflammation of the sclerotic and surrounding fibrous tissues of the eye excited by cold. When severe, the inflammation generally extends to the conjunctiva and cornea. The *symptoms* consist of bright redness of the eye, the turgid vessels being arranged in a radiated or zonular form, and being evidently beneath the conjunctiva; of severe pulsating pain round the orbit, in the eyebrow and temple, always most severe during the night; of dimness of vision, from haziness of the cornea and contraction of the pupil; and of a variable amount of general constitutional disturbance. There is no chemosis, neither does the access of light prove very distressing.

Treatment.—In the early stage, warm baths, with alkaline purgatives will give great relief. After the bowels have been freely acted upon, the administration of calomel and opium (F. 22) is generally advised; but, within the scope of my experience, iodide of potassium (F. 24) has proved very much more serviceable. This agent may also be advantageously combined with colchicum (F. 25); or, in some cases, the latter drug may be given alone. Blisters behind the ears, or a large one to the nape of the neck, will occasionally perhaps do good. Collyria have

but little power over this disease. During the progress of the case, the pupil of the affected eye must be kept dilated, by placing a drop of a solution of atropine in it (F. 267), or by smearing the extract of belladonna, made semi-fluid by admixture with distilled water, round the orbit.

b. CATARRHO-RHEUMATIC OPHTHALMIA, or inflammation of both the conjunctiva and the sclerotics, is a common and severe disease, characterized by a combination of the symptoms of conjunctivitis and sclerotitis. Thus, there is a feeling of sand between the eyeball and eyelids, severe circumorbital pain, the peculiar redness of both affections, chemosis, intolerance of light, epiphora, &c. When the inflammation runs on unchecked for eight or nine days, ulceration of the cornea, and the deposition of pus between its lamellæ, constituting the disease called onyx, is to be feared; at the same time, the iris becomes sluggish in its movements and altered in color, and lymph is effused into the pupil, sometimes quite closing it.

The *treatment* must be of a twofold nature, with a view to relieve both the sclerotic and conjunctival affections. As regards the former, those remedies must be adopted which have been mentioned in speaking of rheumatic ophthalmia; while, as to the latter, the stimulating applications so useful in simple conjunctivitis must be had recourse to, especially the solution of nitrate of silver (gr. iv—x to ʒj), or the vinum opii.

4. INFLAMMATION OF THE CORNEA.

STRUMOUS CORNEITIS.—The cornea frequently suffers in the affections previously noticed. Scrofulous inflammation of the cornea, however, is a peculiar chronic disease, lasting for months, or even years, occurring chiefly in strumous subjects between the ages of eight and eighteen, and commencing in the conjunctival layer of the cornea, but gradually extending in the deeper tissues. It is generally accompanied by slight sclerotic redness, some opacity and more convexity than natural of the cornea, dilatation of the pupil, and slight constitutional disturbance; there is no great intolerance of light, and but little pain, except

sometimes in the early stages. The change of figure in the cornea is due to an increased secretion of the aqueous humor.

Treatment.—When the inflammation is active, and opacity of the cornea rapidly progressing, perfect rest in a dark room, warm baths, mercurial purgatives, and perhaps blisters behind the ears, must be resorted to. In chronic cases, the treatment recommended in speaking of strumous ophthalmia must be adopted. In one troublesome case, I found much benefit from the long-continued use of the iodide of potassium, sarsaparilla, and cold-liver oil. Warm anodyne fomentations may be beneficially applied; while a nourishing diet free from stimulants must in every instance be allowed.

5. INFLAMMATION OF THE IRIS.

Iritis is a most interesting disease to the physician and to the pathologist. Suspended, like a curtain with a circular aperture near its centre, between the cornea and crystalline lens, and bathed on both sides by the aqueous humor, the iris serves to regulate the quantity of light admitted to the retina. By it, the cavity containing the aqueous humor is divided into an anterior and a posterior chamber, lining which is a serous membrane, forming a shut sac analogous to the peritoneum; consequently, in iritis, the inflammation is similar to that of other serous membranes; that is to say, is of the adhesive kind, is attended with the formation of coagulable lymph.

Diagnosis.—Now, from whatever cause iritis may arise, its symptoms are the same. They are thus clearly enumerated by Dr. Mackenzie:—

1. Zonular sclerotitis; fine hair-like vessels, running in radii towards the edge of the cornea.

2. Discoloration of the iris. If naturally blue, it becomes greenish; if dark colored, reddish. This is the result of increased vascularity, or of effusion of lymph into its substance, or on its posterior surface.

3. Contraction, irregularity and immobility of the pupil.

4. Effusion of coagulable lymph into the pupil and posterior chamber, and occasionally into the anterior.

5. Adhesions of the iris, and especially of its pupillary edge, to the capsule of the lens; in some rare cases, to the cornea.

6. Tubercles, pustules, or small abscesses of the iris.

7. Dimness of sight, and sometimes total blindness.

8. Pain in the eye, and nocturnal circumorbital pain.

It must not be supposed that in every case all these symptoms will be met with, but rather that a certain number of them will be found sufficient to render the diagnosis certain. The constitutional disturbance is well marked, though it is not generally severe.

If the inflammation be not checked, it creeps on, involves the choroid coat and retina, and spoiling the delicate texture of the latter, destroys the sight forever.

Causes.—The chief causes of this affection are—exposure to cold and wet, giving rise to rheumatic or idiopathic iritis; syphilis and gonorrhœa, causing syphilitic iritis; injuries and wounds producing traumatic iritis; and certain conditions of the constitution, especially the scrofulous, rheumatic, and gouty. Iritis arising as one of the secondary effects of syphilis, is perhaps the most common; it is usually attended with the other effects of the constitutional syphilis, such as copper-colored eruptions, nodes, pains in the bones, especially severe at night, and ulceration of the throat. Without laying too much stress upon the local peculiarities of syphilitic iritis, it may be mentioned that, at first, the redness is much less severe than in the rheumatic form; that the iris often assumes a rusty color, especially near its pupillary edge; and that the pupil is apt to be displaced, and to be drawn upwards towards the root of the nose.

Treatment.—Mercury, bloodletting, and belladonna are the three supports on which we are taught to rely; and so strongly have these remedies been recommended, that it will be difficult to persuade many practitioners of their inutility. But that the first two agents may be often advantageously dispensed with, is, I think, proved by the sixty-four cases of Dr. W. H. Williams; all of which were

cured by sustaining the general health, relieving pain with narcotics, and keeping the pupil dilated by belladonna.*

Hence, I would advise that in the treatment of inflammation of the iris the patient be kept very quiet in a darkened room; that hot fomentations, with poppy capsules, be applied; that the bowels be kept regular by mercurial purgatives, or enemata; that opium be given to relieve the pain; and that the diet be plain but nourishing, and free from stimulants. If there be depression, ammonia and bark, or quinine may be advantageously given. When the circumorbital pain is intense, it is said that relief may be speedily given by mixing three grains of powdered opium with ten of mercurial ointment, and well rubbing the compound into the temple. Moreover, during the treatment, from the commencement to the termination, the pupil must be kept dilated, in order to prevent the iris from forming adhesions with the capsule of the crystalline lens. This may be done by belladonna or by a solution of atropine (F. 267). No astringent or other collyria should be employed.

Oil of turpentine has long been recommended in iritis where the use of mercury is contra-indicated. Mr. Guthrie speaks favorably of its effects in some few instances (F. 38). Should the practitioner be unwilling to trust too much to Nature, he can try its effects.

6. INFLAMMATION OF THE CHOROID.

Choroiditis is rarely seen alone, since the inflammation rapidly spreads to the neighboring textures of the eye, producing disorganization, &c., by which it is recognized rather than by any symptoms of vascular excitement.

Diagnosis.—The pathognomonic symptom is the formation of a blue zone, of variable breadth and completeness, round the cornea, produced by thinning of the sclerotic, followed by the protrusion of small dark blue humors. The pupil is frequently displaced, contracted, or dilated, and immovable; the cornea often becomes in parts opaque.

* See the Remarks on Inflammation, p. 2A.

There is generally considerable pain, intolerance of light, and dimness of vision; the constitutional symptoms are slight. The disease is followed by enlargement of the globe of the eye, and sometimes by suppuration and the formation of fungous growths; the sight is often lost, or at least much impaired.

Treatment.—This consists in the use of mercury, first as a purgative, and afterwards as an alterative. The warm bath, counter-irritation to the temples and behind the ears by means of the tartar emetic ointment, and the administration of the liquor potassæ arsenitis (F. 41, 42) are the remedies usually recommended.

7. INFLAMMATION OF THE RETINA.

Retinitis usually occurs as a sympathetic affection in the course of other ophthalmiæ; as a simple idiopathic inflammation it is rare.

Symptoms.—It is characterized by acute deep-seated pain in the eyeball, extending to the temples and forehead; great intolerance of light; diminution or loss of the power of vision; and frequent sensations of flashes of light. The pupil is found contracted, the iris loses its brilliancy and becomes motionless, and there is vascularity of the sclerotic. The constitutional disturbance is severe. High fever and delirium are often present.

Causes.—It is generally caused by exposure to vivid light—large fires, furnaces, &c. Reflected light appears very injurious to the retina; hence the pernicious effects of the glare from snow, or from the burning sands of tropical climates.

Treatment.—Perfect rest in a darkened room; the application of cold lotions or of hot fomentations, according to the patient's feelings; mild purgatives; sedatives to relieve pain; and a simple diet, are the means upon which we must rely.

8. AMAUROSIS.

The term amaurosis, from *μαρπέω*, to obscure or darken, is used to express partial or complete loss of vision arising from defective nervous function.

Pathology.—The transparent tissues and humors of the eye may all be healthy; but the nervous matter which should receive and convey impressions, and render them perceptible to the mind, is affected. As Dr. Mackenzie says, if the retina be incapable of receiving with correctness impressions of external objects through the medium of light; if the optic nerve be unable to convey to the sensorium the impressions made upon the retina; or if the brain be incapable of receiving the impressions conveyed by the optic nerve, the individual must be affected with an obscurity in vision, or suffer a total deprivation of sight, according to the degree of inability in these several parts to execute these functions. Even when he goes no further than this, the pathologist must see the necessity of distinguishing different cases of amaurosis according as the retina, the optic nerve, or the brain is the part first and principally affected. Now the affections of either of these three parts which may cause amaurosis are *pressure* and *structural change*, such as inflammation, suppuration, induration, ramollissement, hypertrophy, atrophy, &c. It must be remembered, however, that slight structural changes are often produced by remote causes. Thus, amaurosis may arise from the presence of worms in the intestines, the intestinal irritation being sufficient, in an extreme case, to excite a morbid condition of some part of the optic apparatus. So, again, the irritation of teething may produce temporary amaurosis in the same manner.

Symptoms.—In examining an amaurotic patient, the first points that attract attention are his gait and expression of countenance. He walks with an air of uncertainty, and his eyes, instead of being directed towards surrounding objects, have an unmeaning look—appear to be staring at *nothing*. In incomplete amaurosis, the movements of the *iris* are sluggish and the pupil is dilated; in total blind-

ness, the pupil is greatly dilated and the iris immovable. When both eyes are affected, they are often unnaturally prominent, and of an unhealthy color; the sclerotica being frequently of a yellowish hue, and covered with varicose vessels.

In the commencement, the failure of sight is only experienced occasionally, as after long continued exertion of the eyes, reading by candlelight, &c. Occasionally it begins with indistinct vision, as *amblyopia*; or objects appearing double, *diplopia*; or only one-half of an object may be seen, *hemipia*. At the same time there is frequently headache, and ocular spectra become visible, the patient complaining of black specks floating in the air, or flies—*muscae volitantes*.

Treatment.—It is difficult to lay down rules for the treatment of this disease, for since the causes upon which it depends are various and opposite, so, consequently, are the means of cure numerous and unsatisfactory. In all instances, however, attention must first be directed to the general health. Each case is then to be studied in all its bearings, especially with reference to the cause of the affection. When it manifestly results from inflammation, strict quiet, warm baths, and low diet may be necessary; when from vascular exhaustion or nervous debility, the preparations of iron, bark, good diet, sea air, and cold bathing are indicated. Strychnia has been particularly recommended, and probably in some few examples it may stimulate the optic nerve into action (F. 357). Electricity acts, I suppose, in the same way. Both remedies require caution in their use, however, for if improperly employed they do much mischief. Counter-irritants behind the ears, or to the nape of the neck, or to the shaven scalp, are spoken highly of by some authorities. Dr. Prichard recommends an issue to be made by dividing the scalp with a bistoury from the summit of the forehead to the occiput, and filling the space with peas. I have seen this cruel practice resorted to by physicians on several occasions, but I cannot remember that benefit was derived in a single instance.

SECTION XI.

DISEASES OF THE EAR.

1. OTALGIA.

OTALGIA, or earache, may be *symptomatic* of inflammation of the ear, or of the presence of foreign bodies, or of tonsillitis, or of disorder of the *prima via*, or of rheumatism of the head, &c. ; or it may be *idiopathic*, that is to say, true neuralgia of the ear. In the latter case, the pain is most severe on its invasion, and unlike the pain in otitis, does not increase in severity, is unattended by fever, and often disappears suddenly. When the pain is very severe, it frequently shoots through the nervous filaments distributed over the same side of the face and head, causing much suffering and restlessness. When the affection is symptomatic, the *treatment* must be directed to the primary disease ; when idiopathic, mild purgatives, a blister behind the affected ear, or the application of chloroform or the tincture of aconite, will be useful. Any carious tooth must be extracted or stopped.

2. OTITIS.

Otitis, or inflammation of the ear, may affect the external and internal ear at the same time, or it may be confined to either.

EXTERNAL OTITIS, or inflammation of the membrane lining the meatus auditorius externus,* is at first characterized by dryness, itching, and heat of the part, gradually increasing to a dull aching, and eventually to an acute pain ; generally increased at night, causing great agony,

* See Wilde's Aural Surgery.

sleeplessness, fever, and even delirium. The lining of the meatus is swollen, dry, and pinkish; in a short time a muco-purulent or purulent discharge takes place, and relief is then experienced.

INTERNAL OTITIS, or inflammation of the lining membrane of the cavity of the tympanum, is a most severe disease; being generally combined with inflammation of the membrana tympani—the *myringitis* of Wilde. Though frequently a disease of youth, it may occur at any time of life; cold is a frequent cause of it, especially in debilitated or strumous individuals. It commences with violent headache, followed by intense, acute, gradually increasing pain in the ear, and loud or beating noises; after a short time, a sense of bursting or distension in the ear is experienced. The eyes become injected, the countenance anxious, the skin hot, pulse frequent, and the functions of the kidneys and bowels disordered. Delirium is often present, or—in children—convulsions. Facial paralysis, caused by the inflammation extending to the bony canal in which the portio dura passes round the tympanum, may occur. The disease terminates in one of three ways: either by resolution; or by suppuration, the pent-up pus bursting through the membrana tympani, and so discharging itself; or by the inflammatory process spreading through the mastoid cells internally, or by the bony meatus to the periosteum covering the mastoid process externally. Peculiar forms of otitis have been well described by Mr. Harvey, such as the rheumatic and gouty; which, however, need only be here mentioned.

The *treatment* of both forms of otitis requires caution. The bowels must be kept open, the action of the skin promoted, and the patient should be kept quiet in bed. If there be much fever, salines may be administered. Hot fomentations and poultices will be found soothing: but when there is much suffering, opium must also be administered. Should the pain continue severe, both Wilde and Harvey recommend that an incision, one inch long, be made over the mastoid process, down to the bone. Unfortunately the membrana tympani sometimes becomes ruptured. The inconvenience which arises must be subsequently

obviated by the application of a thin layer of moist cotton wool as recommended by Mr. Yearsley; or by the use of an artificial membrane as suggested by Mr. Toynbee.

3. OTORRHOEA.

Otorrhœa—a purulent or muco-purulent discharge from the ear—is, properly speaking, only a symptom of certain diseases of this organ; as of inflammation, polypus, granulations on the surface of the *membrani tympani*, &c. It occurs very frequently, however, without any appreciable cause in young children about the time of dentition; or on the subsidence of any of the exanthemata, especially in strumous subjects. Commonly, under appropriate treatment, the discharge ceases in a short period; but occasionally it becomes chronic, in which case it may continue for years, destroying in the course of time the *membrana tympani*, the *ossicula auditûs*, and producing caries of the bony walls of the meatus and tympanum. The disease may even extend to the cells of the mastoid process of the temporal bone; or in the opposite direction along the petrous portion of the same bone, until the brain and its membranes becoming involved in the unhealthy action, rigors, fever, and masked cerebral symptoms show themselves, and the case ultimately terminates in convulsions, coma, and death. Cases of phlebitis with pleurisy and pneumonia have also been found—and not very uncommonly—to result from caries of the mastoid cells.

The first step in the *treatment* must be to syringe and then carefully examine the meatus auditorius externus. If the discharge be not severe, and no cause, as polypus, &c., be found to account for it, a cure may often be effected by daily dropping into the ear a solution of alum, zinc, or tannin, of the same strength as the various collyria (F. 269). When these means fail, the surface of the canal should be painted with a solution of nitrate of silver (gr. vj ad ʒj), by means of a camel's hair pencil; this must be repeated every second day, the ear being frequently syringed in the interval with tepid water by means of an

elastic bottle. The application of glycerine, as recommended by Mr. Thomas Wakley, will also be beneficial after the use of the astringents. Where the patient's general health is bad, tonics and change of air will be necessary; in scrofulous cases, iodine, cod-liver oil, &c., should be tried.

SECTION XII.

DISEASES OF THE BLOODVESSELS.

1. AORTITIS.

Aortitis, or acute inflammation of the aorta, is a very rare disease. The *symptoms* are obscure ; probably great general uneasiness, rigors followed by fever, pain and violent pulsation of the vessel, and great palpitation of the heart, will be the most prominent. In a very interesting case reported by Dr. Parkes,* a loud, rough, systolic bruit, due to the passage of the blood over a surface roughened by a deposit of lymph, was heard from the third dorsal vertebra down into the lumbar region ; the pulse was irregular and small, but this arose from the aortic orifice of the heart being diseased. The pulse is usually unaffected.

Should the existence of aortitis be suspected, warm baths, dry cupping over the spine, counter-irritation by means of blisters, and the administration of calomel and opium, are the measures to be resorted to.

2. AORTIC PULSATION.

Aortic pulsation is a peculiar functional affection, characterized by violent throbbing, usually most observable in the abdominal aorta. It causes annoyance rather than pain ; but at times produces sickness and syncope. The pulsation may frequently, in thin subjects, be seen at the epigastrium, and sometimes at the umbilicus ; on applying the hand, a jerking, quick, strong, forward impulse is felt ; while auscultation often discovers a bellows murmur, especially if anæmia coexists. The diagnosis between functional

* Medical Times, 23d February, 1850.

and aneurismal pulsation, is somewhat difficult. I have found this pulsation not uncommon in cases of uterine disease. It has also been frequently noticed in hypochondriacs, in those whose digestive organs are deranged, in gouty patients, in chlorotic females, &c.

The *treatment* must be directed to the removal of the cause. In a case which was under my care during the year 1853, in the Hospital for Women, the pulsation produced so much sickness and distress that it was frequently necessary to control it by the application of ice to the abdomen, and by the administration of morphia. Hohnbaum, who suffered for some years from this disease in connection with dyspepsia, says that he derived most relief from the use of the aperient waters of Carlsbad, change of air, and relaxation from his professional duties.

3. ANEURISM OF THE AORTA.

Three forms of aneurism are usually described: *true aneurism*, in which all the coats of the artery dilate and unite in forming the walls of the pouch; *false aneurism*, in which the inner and middle arterial tunics being ruptured, the walls are formed by the cellular coat and contiguous parts; and *mixed or consecutive false aneurism*, in which the three coats having at first dilated, the inner and middle ones subsequently rupture as the distension increases. Aortic aneurism is a disease of advanced periods of life rather than of youth; it often results from atheromatous or calcareous deposits, or from fatty degeneration of the coats of the vessel; when the tumor is small, its existence often goes undetected, and death generally results from rupture of the sac, or it may also occur suddenly without any rupture, or it may take place gradually from exhaustion caused by the long-continued suffering.

a. ANEURISM OF THE THORACIC AORTA—is chiefly met with in the ascending portion, or in the arch. Its general *symptoms* are very obscure, partly in consequence of their similarity to those arising from disease of the heart. When the aneurismal tumor is large and pulsating, and rises out of the chest, producing protrusion or absorption of the

sternum and ribs, then the diagnosis is altogether as easy as it was before difficult. When the sac presses upon the trachea, there will be dyspnoea; when on the recurrent laryngeal nerves, aphonia; when on the œsophagus, dysphagia and symptoms of stricture; and when on the thoracic duct, inanition and engorgement of the absorbent vessels and glands.

Aortic aneurism is sometimes accompanied by a bellows-sound, sometimes not. In false aneurism there is generally a murmur both with the entrance and exit of blood into the sac; or there may be one loud, prolonged, rasping bruit, from the passage of the blood over the roughened, inner surface of the vessel. In true aneurism or mere dilatation of a part of the wall of the artery, murmurs are seldom audible. A small but free opening from the canal of the artery into the aneurismal sac, and a roughened state of the arterial tunics from degeneration or from atheromatous deposit, are, however, two conditions which will give rise to a bruit. In both forms, when a murmur exists, a peculiar thrilling or purring tremor will be felt on applying the hand over the sternum.

6. • ANEURISM OF THE ABDOMINAL AORTA—often gives rise to acute pain in the lumbar region, occasionally shooting into either hypochondrium, and downwards into the thighs and scrotum; constipation aggravates the pain, while lying on the face often gives remarkable relief. By careful examination, a tumor may generally be felt, which communicates a constant and powerful pulsation to the hand. On applying the stethoscope, a short, loud, abrupt bellows-sound will be heard.

The *treatment* of aortic aneurism must consist in the avoidance of all bodily and mental excitement; in the use of a generous reparative diet, free from stimulants of every kind; and in attention to the digestive, secreting, and excreting functions.

The method of cure proposed by Valsalva and Albertini, and which has been since often adopted until the present time, consisted in bleeding the patient frequently, and keeping him upon the lowest possible diet compatible with the sustenance of life. By this means it was thought that

the force and velocity of the blood would be diminished, and that coagulation would take place in the aneurism. Since, however, the coagulation of fibrin seems to be impeded by all lowering measures, and as the rapidity of the circulation and the throbbing of the arteries is increased by depletion, Valsalva's method would seem to produce effects the very opposite to those wished for, and such is the case. Dr. Copland says he has seen cases "in which aneurismal tumors had existed for some time without any increase, so long as the patient avoided any marked vascular excitement and continued his accustomed diet; but when repeated depletions and vegetable or low diet were adopted, great augmentation of the tumor, and fatal results soon followed."

In advanced and aggravated cases we can only endeavor to palliate the various symptoms as they arise. Thus the pain and depression will always be moderated by opium, which is an invaluable drug; the harassing cough may generally be relieved by sedatives and expectorants; the dropsy by small doses of mercury, digitalis, squills, and other diuretics; while the heart's action may be regulated and moderated by assafoetida, camphor, and digitalis in small doses. In all cases, experience no less than common sense teaches us to avoid too debilitating a plan of treatment. This is especially proved by the fact, that of all the diseases which accompany aneurism, tuberculosis is the most common.

4. PHLEBITIS.

Phlebitis, or inflammation of the veins, depends upon, or is generally accompanied by, disease of the blood. Mr. Henry Lee has clearly shown that the lining membrane of veins has a very slight tendency to inflammation; and that when inflamed it does not exude lymph as a serous membrane does.

Symptoms.—The signs of phlebitis are—pain which is increased on pressure, swelling, stiffness, and redness in the course of the vessel, generally spreading upwards towards the heart. When suppuration results, it is usu-

ally accompanied or perhaps preceded by rigors and flying pains in various parts of the body. The constitutional disturbance is always great. The result of the admixture of pus or other morbid fluids with blood is to cause the latter to coagulate; in this way a vein sometimes becomes filled with a coagulum, when, if the morbid matter is of such a nature that it ought to be eliminated, the areolar tissue around inflames, suppuration and abscess follow, the coats of the vein ulcerate, and the contained clot is discharged by means of the abscess. On the other hand, if the poison does not produce coagulation, it mixes with the circulating blood, affects the whole system, and is subsequently deposited in distant parts, as in the lungs, liver, spleen, eye, joints, areolar tissue, &c., giving rise to very serious consequences.

Treatment.—This consists in rest, fomentations and poultices, and purgatives. When the system is low, stimulants and tonics will be necessary; especially good beef-tea, port wine or brandy, and opiates to relieve the restlessness.

5. PHLEGMASIA DOLENS.

Phlegmasia dolens probably depends upon inflammation of the internal or external iliac and femoral veins; commencing for the most part—especially in puerperal women—in the uterine branches of the hypogastric veins. It has been termed obstructive phlebitis. We are chiefly indebted to Dr. Robert Lee for our knowledge of the pathology of this affection. It is very common after parturition, especially in women who have been much weakened by flooding, or other causes.

Symptoms.—It commences generally, in from one to five weeks after labor, with fever, headache, thirst, nausea, and pain; swelling, and loss of motor power of one of the lower extremities—rarely both limbs are affected—the swelling beginning at the upper part of the thigh, and gradually extending downwards. The limb is unnaturally hot, tender, not cedematous, but swollen sometimes to twice its natural size; it is of a pale white color, and has a

glazed or shining appearance. The acute stage generally lasts about fourteen or twenty-one days, but the limb often remains swollen and feeble, or almost useless for many weeks or even months.

Pathology.—Dr. Mackenzie rejects the opinion that this disease arises from phlebitis, but believes that it is due to a vitiated state of the blood, giving rise to *irritation* of the nerves, muscles, lymphatics, lining membrane of veins, and areolar tissue of the limb; owing to which there result the tense, elastic swelling, pain, loss of the power of motion, affection of the lymphatics, and obstructed condition of the veins, constituting the pathognomonic symptoms. Hence, this gentleman asserts that phlegmasia dolens is a blood disease, the affection of the veins being of secondary importance, as it is merely an effect of the disorder.* Dr. Robert Lee—in a paper published in the same volume as Dr. Mackenzie's—gives the results of his last twenty-four years' experience. His cases, he says, “prove in the most conclusive manner that inflammation of the iliac and femoral veins is the proximate cause of the disease; and that in puerperal women the inflammation commences in the uterine branches of the hypogastric veins. It has, likewise, been demonstrated by morbid anatomy, that phlegmasia is a disease which may take place in women who have never been pregnant, and in the male sex, and that, under all circumstances, the proximate cause is the same.”

Treatment.—Dr. David Davis, who paid much attention to this affection, recommended the local abstraction of blood by leeches, the application of blisters, evaporating lotions, free and constant exposure to the action of the atmosphere, and the internal exhibition of digitalis and blue pill. In the cases which have been under my own observation, I have generally at first employed warm fomentations, perfect rest, low diet, and opiates to relieve the pain. Subsequently great benefit has seemed to accrue

* *Medico-Chirurgical Transactions*, vol. xxxvi. p. 169. London, 1853.

from a mild alterative course of mercury, iodide of potassium, and a more generous diet. Dr. Robert Lee places most reliance upon local bleeding.

Blisters, stimulating liniments, and bandages to the limb are useful when all the inflammatory symptoms have subsided.

APPENDIX OF FORMULÆ.

In prescribing a medicine, attention must be paid to the following points: Age, Sex, Temperament, Habit, Condition of System, and Climate. The succeeding formulæ are for adults, except when the contrary is stated; the doses may, however, be reduced by attention to this table:—

For an adult, suppose the dose to be 1				or ʒj.
Under 1 year,	will require only			1-12th or gr. v.
" 2	"	"	"	1-8th or gr. viiss.
" 3	"	"	"	1-6th or gr. x.
" 4	"	"	"	1-4th or gr. xv.
" 7	"	"	"	1-3d or ʒj.
" 14	"	"	"	1-half or ʒss.
" 20	"	"	"	2-3ds or ʒij.

Above 21, the full dose.

" 65, the dose must be diminished in the inverse gradation of the above.

Children bear larger doses of mercury than adults; but they are much more susceptible to the influence of opiates. Consequently, opium must be given in very minute doses to them. Females, also, require smaller quantities of powerful medicines than males.

The practitioner will do well to bear in mind the following rules: 1. When a disease is progressing favorably towards recovery, do not interfere with the efforts of nature by the administration of drugs. 2. When drugs are needed, other things being equal, employ the remedy which will be the least distressing at the time, and subsequently the least injurious to the constitution. 3. Put the medicine in that form in which it can be most easily taken. When possible, especially with children, cover the disagreeable taste of the draught by syrups, &c. 4. Attend to the condition under which the patient will be at the period of the medicine's action, *e. g.*, it will be worse than useless to give a sudorific to an individual obliged to be in the open air soon after taking it. 5. Be careful that the various agents in the prescription are not incompatible with each other, *unless it be desired to form some new or particular compound*;

there are a few exceptions to this rule, as where experience tells us that certain unchemical compounds, bichloride of mercury and tincture of bark, gallic acid and tincture of opium, calomel and Dover's powder, &c., are all valuable preparations in curing disease. 6. Remember that if a disease be incurable, it may still admit of great alleviation; hence it is cruel to give up any case; although, at the same time, the patient is not to be deceived by false promises. 7. Never order, or sanction the use of, a quack medicine, *i. e.*, one the composition of which is kept a secret.

I. ALIMENTS.

Formula 1. Extract of Beef.

Take one pound of rumpsteak, mince it like sausage meat, and mix it with one pint of cold water. Place it in a pot at the side of the fire to heat very slowly. It may stand two or three hours before it is allowed to simmer, and then let it boil gently for fifteen minutes. Skim and serve.

2. Essence of Beef.

Take a pound of lean beef; free from skin and fat; chop it up; put it into a large earthen jar with cover; cement the edges with flour paste; tie it up tightly in a cloth; plunge it into a saucepan, and let it boil for two hours; pour off the liquid essence from the coagulated muscle; let it stand till cold, and skim off the fat.—Dr. DRUITT. *In intense debility.*

3. Extract of Bullock's Blood.

This somewhat novel remedy is beginning to be pretty much used by German physicians. It is prepared, according to Mauthner's process, by straining the blood of the ox through a fine sieve, and drying and powdering the residue. Of this medicine Dr. Höring gives from ten to thirty grains in the twenty-four hours, according to the age of the patient. He relates the particulars of three cases, in which he administered it; the first, a case of curvature of the lower part of the spinal column, with loss of power of limbs; the second and third, cases of tuberculosis, occurring in a child aged three, and a man aged forty. The treatment was successful in every case, the curvature being arrested in the first, and the cough and emaciation greatly improved in the second and third.—*Würtemb. Corr. Bl.* 32, 1853.

4. Eggs, Cream, and Extract of Beef.

Wash a quarter of a pound of the best pearl sago until the water poured from it is clear. Then stew the sago in a quart of water

until it is quite tender and very thick ; mix with it a pint of good boiling cream and the yolks of four fresh eggs, and mingle the whole carefully with two quarts of good beef-tea, which should be boiling. Serve. *This nourishing broth is known as Jenny Lind's Soup.*

5. Mutton or Veal Broth.

Take of mutton or veal four pounds ; cold water, four quarts ; a little salt ; and rice, four oz. Simmer for four hours, boil for a few minutes, strain and serve.

6. Gruel and Beef-tea.

Take two tablespoonfuls of oatmeal with three of cold water, and mix them thoroughly. Then add a pint of strong boiling beef-tea (or of milk) ; boil for five minutes, stirring well to prevent the oatmeal from burning, and strain through a hair sieve. *An excellent simple restorative during convalescence from acute disease before solid food can be taken.*

7. Tapioca and Cod Liver.

Boil a quarter of a pound of tapioca till tender, in two quarts of water ; drain it in a cullender, then put it back in the pan ; season with a little salt and pepper, add half a pint of milk, and put over one pound of fresh cod liver cut in eight pieces. Set the pan near the fire to simmer slowly for half an hour or a little more, till the liver is quite cooked. Press on it with a spoon, so as to get as much oil into the tapioca as possible. After taking away the liver, mix the tapioca. If too thick, add a little milk, then boil it a few minutes ; stir round, add a little salt and pepper, and serve.—ALEXIS SOYER. *Tapioca thus cooked is nourishing and easily digested.*

8. The Bran Loaf.

The formula used by Mr. CAMPLIN in *Diabetes* is as follows : Take a sufficient quantity (say two or three quarts) of wheat bran ; boil it in two successive waters for ten minutes, each time straining it through a sieve ; then wash it well with cold water (on the sieve) until the water runs off perfectly clear ; squeeze the bran in a cloth as dry as you can, then spread it thinly on a dish, and place it in a slow oven ; if put in at night, let it remain until the morning, when, if perfectly dry and crisp, it will be fit for grinding. The bran thus prepared must be ground in a fine mill, and sifted through a wire sieve of sufficient fineness to require the use of a brush to pass it through ; that which does not pass through at first must be ground and sifted again, until the whole is soft and fine.

Take of this bran-powder three ounces troy, three fresh eggs,

one ounce and a half of butter, rather less than half a pint of milk; mix the eggs with part of the milk, and warm the butter with the other portion; then stir the whole well together, adding a little nutmeg and ginger, or any other agreeable spice. Immediately before putting into the oven, stir in first thirty-five grains of sesquicarbonate of soda, and then three drachms of dilute hydrochloric acid. The loaf thus prepared should be baked in a basin (previously well buttered) for about an hour, or rather more.

Biscuits may be prepared as above, omitting the soda and hydrochloric acid and part of the milk, and making them of proper consistence for moulding into shape.

If properly baked, the loaves or biscuits will keep several days, but should always be kept in a dry place, and not be prepared in too large quantities at a time.

9. *White Wine Whey.*

To half a pint of hot milk, add one wineglassful of sherry or Madeira; then boil until the curd separates, and strain through muslin.

10. *Cauld.*

Beat up one egg with a wineglassful of sherry, and add it to half a pint of fine hot gruel. Flavor with sugar, nutmeg, and lemon-peel.

In insomnia with debility.

11. *Ferruginous Chocolate.*

Spanish chocolate, 16 oz.; carbonate of iron, half an ounce. Divide into one ounce cakes. One to be dissolved in half a pint of milk, and taken night and morning.

In anæmia, amenorrhæa, &c.

12. *Lime-Water and Milk.*

R. *Liquoris calcis*,
Lactis, aa \mathfrak{z} ij. *Misce.*

This compound will sometimes be retained when all other food is ejected. As a variety, milk and soda-water, in equal proportions, may also be ordered.

13. *Artificial Goat's Milk.*

Chop an ounce of suet very fine, tie it lightly in a muslin bag, and boil it slowly in a quart of new milk. Sweeten with white sugar.

DR. PARIS. *An excellent aliment in some cases of tabes mesenterica, &c.*

14. *Milk, Flour, and Steel.*

Beat up carefully one tablespoonful of flour, one raw egg, and about a scruple of the carbonate of iron, with half a pint of new milk; flavor with nutmeg and white sugar. To be taken for lunch with a biscuit.

In the early stages of tuberculosis, the author has found this mixture very valuable.

15. *Bread Jelly.*

Take a quantity of the soft part of a loaf, break it up, cover it with boiling water, and allow it to soak for some hours; the water—containing all the noxious matters with which the bread may be adulterated—is then to be strained off completely, and fresh water added; place the mixture on the fire, and allow it to boil for some time until it becomes smooth; the water is then to be pressed out, and the bread on cooling will form a thick jelly. Mix a portion of this with sugared milk and water, for use as it is wanted.

DR. CHURCHILL. *A good food for infants at the time of weaning, &c.*

16. *A Nutritious Demulcent Drink.*

Mix together half a pint of *Mistura Acacia*, *Mistura Amygdala*, and pure milk; sweeten with sugar-candy or honey; and add one large tablespoonful of any liquor. Allow the whole to be taken during the day.

This drink is very grateful in cases of tonsillitis, ulceration of the pharynx, &c.; also in some cases of debility with irritability of the stomach, and a tendency to diarrhœa.

17. *An Excellent Nutritious Enema.*

This enema may be made by mixing together three ounces of very strong beef-tea, half an ounce of melted butter, and half an ounce of brandy or one ounce of port wine. It may be administered twice or thrice in the course of the twenty-four hours, in cases of acute gastritis, carcinoma of the stomach, &c., where it is necessary to rest this viscus.

18. *Vel.*

Take two ounces of essence of beef, two ounces of port wine, half an ounce of cream, half an ounce of cod-liver oil, and twenty drops of laudanum. Administer this enema every eight hours.

II. ALTERATIVES AND RESOLVENTS.

19. *Compound Calomel Pill.*

R. Pilulæ Hydrargyri Chloridi Compositæ, gr. v; omni nocte sumenda, vel nocte maneque.

In cutaneous eruptions, especially when dependent on a venereal taint.

20. *Sarsaparilla and Corrosive Sublimata.*

R. Liquoris Hydrargyri Bichloridi, ʒss;

Extracti Sarsæ Liquidī, ʒj;

Decocti Sarsæ Compositi, ʒiiss. Misco, fiat haustus ter die sumendus.

21. *Bromide of Mercury and Sarsaparilla.*

R. Hydrargyri Bromidi, gr. ss;

Decocti Sarsæ Compositi, ʒiiss. Misco. Ter die sumendus.

In syphilitic lepra and secondary syphilitic eruptions.

22. *Calomel and Opium.*

R. Hydrargyri Chloridi, gr. ij;

Pulveris Opii, gr. ʒ;

Confectionis Rosæ, q. s. ut fiat pilula quartâ quâque hora sumenda.

As an alternative, when we wish to get the system quickly under the influence of mercury.

23. *Iodide of Potassium Mixture.*

R. Potassii Iodidi, ʒj;

Tincturæ Hyoscyami, ʒj;

Infusi Quassiæ, ʒvj. Misco. Sumat ʒj ter die.

24. *Iodide of Potassium and Liquor Potassæ.*

R. Potassii Iodidi, ʒj;

Liquoris Potassæ, ʒij;

Tincturæ Opii, ʒss;

Infusi Quassiæ, ʒvj; Misco. Sumat ʒj ter die.

In chronic rheumatism with copious secretion of lithates.

25. *Iodide of Potassium and Colchicum.*

R. Potassii Iodidi, gr. ij;

Vini Colchici, ℥xv;

Tincturæ Hyoscyami, ℥x;

Infusi Quassiæ, ʒj. Misco, fiat haustus ter die sumendus.

In chronic gout.

26. *Sarsaparilla and Iodide of Potassium.*

R. Decocti Sarsæ Compositi, Oj;
Potassii Iodidi, ʒj. Misco. Sumat poculum (uncias
quatuor) bis terve indies.

*In gonorrhæal rheumatism, secondary syphilis, certain skin diseases,
&c.*

27. *Iodine and Sarsaparilla.*

R. Liquoris Potassii Iodidi Compositi, ʒj—ʒss;
Decocti Sarsæ Compositi, ʒiss. Misco, fiat haustus ter die
sumendus.

A useful mode of exhibiting iodine in some forms of bronchocoele, &c.

28. *Iodide of Potassium and Steel.*

R. Potassii Iodidi, gr. xij;
Ferri Ammonio-Citratis, ʒss—j;
Tincturæ Hyoscyami, ʒj;
Misturæ Camphoræ, ʒvj. Misco. Sumat ʒj ter die.

In cases of debility, where iodine is required.

29. *Steel and Iodine.*

R. Tincturæ Ferri Sesquichloridi,
Tincturæ Iodini Compositæ, aa m. v;
Aquæ, ʒj. Misco, fiat haustus ter die sumendus.

In tuberculosis, mesenteric disease, &c.

30. *Steel and Iodine.*

R. Syrupi Ferri Iodidi, ʒss;
Infusi Calumbæ, ʒj. Misco, fiat haustus ter die sumendus.

In strumous affections, chronic rheumatism, &c.

31. *Iodide of Potassium and Steel, for Children.*

R. Potassii Iodidi, gr. iij;
Ferri Ammonio-Citratis, ʒj;
Syrupi Papaveris, ʒij;
Infusi Quassia, ʒiij. Misco. Sumat ʒss ter die.

In tabes mesenterica, scrofula, &c.

32. *Iodide of Potassium and Calumba.*

R. Potassii Iodidi, gr. j;
Potassæ Bicarbonatis, gr. xv;
Tincturæ Aurantii, ʒss;
Infusi Calumbæ, ʒviijss. Misco. Horâ secundâ post cibum
sumitur.

*Prescribed with the best effect in the flatulent dyspepsia of gastric
ulcer.—DR. BRINTON.*

33. *Mercury, Chalk, and Dover's Powder.*

R. Hydrargyri cum Cretâ,
Pulveris Ipecacuanhæ Compositi, ℥ gr. v. Misce, fiat
pulvis omnibus sextis horis sumendus.

In dysentery.

34. *An Alterative and Purgative for Children.*

R. Sodæ Sesquicarbonatis,
Hydrargyri cum Cretâ, ℥ gr. ij ;
Magnesiæ Carbonatis, gr. iij. Misce, fiat pulvis omni nocte
sumendus.

35. *Colchicum and Blue Pill.*

R. Extracti Colchici Acetici, gr. j ;
Pilulæ Hydrargyri, gr. iij. Misce, fiat pilula omni nocte
sumenda.

In gout with deficient action of the liver.

36. *A Mercurial for Children.*

R. Hydrargyri cum Cretâ, gr. ij ;
Pulveris Ipecacuanhæ Compositi, gr. ss. Misce, fiat pulvis
omnibus sextis horis sumendus.

*In inflammation of the serous membranes in children from six to
twelve months old. In younger infants, the quantity of compound
ipecacuanha powder must be diminished.*

37. *Creasote Pills.*

R. Creasoti, m̄x ;
Pulveris Glycyrrhizæ, ℥j ;
Mucilaginis Acaciæ, quantum sufficiat ut fiant pilulæ xx.
Sumat pilulas duas ter die.

*In some forms of neuralgia, chronic bronchitis, and vomiting when
unconnected with inflammation or organic disease, as sea-sickness,
&c.*

38. *Turpentine Mixture.*

R. Olei Terebinthinæ Rectificati, ℥j ;
Vitelli Unius Ovi ; tere simul, et adde gradatim
Misturæ Amygdalæ, ℥iv ;
Syrupi Aurantii, ℥ij ;
Tincturæ Lavandulæ Compositæ, ℥iv ;
Olei Cinnamomi, guttæ iv. Misce. Sumat cochlearia magna
ij ter die.

CARMICHAEL.—*Recommended in iritis, where use of mercury is con-
traindicated.*

39. *Iodide of Potassium and Assafœtida.*

- R. Potassii Iodidi, gr. vj;
 Tincturæ Hyoscyami, ℥x;
 Tincturæ Assafœtidæ, ℥iss;
 Decocti Senegæ ad ℥iss. Misce. Capiat cochleare parvum
 4 t̃s quâque horâ.

For a child about two years old, suffering from croup. Also in some cases of infantile pneumonia.

40. *Donovan's Triple Solution.*

- R. Liquoris Hydriodatis Arsenici et Hydrargyri, ℥ss;
 Tincturæ Zingiberis, ℥ss;
 Aquæ, ℥j. Misce, fiat haustus bis die sumendus.

Useful in lepra, psoriasis, &c. It should be taken with the meals.

41. *Arsenical Mixture.*

- R. Liquoris Potassæ Arsenitis, ℥v;
 Tincturæ Hyoscyami, ℥x;
 Infusi Quassia, ℥j. Misce. Ter die sumendus.

To be taken at meal-times. Very useful in many obstinate cutaneous diseases. The dose of the arsenic should be diminished directly the system appears at all affected.

42. *Arsenical Mixture.*

- R. Liquoris Potassæ Arsenitis, ℥iij;
 Liquoris Potassæ, ℥vj;
 Vini Colchici, ℥v;
 Aquæ, ℥j. Misce. Ter die sumendus.

MR. STANTIN.—*In Chloasma, &c.*

43. *Bromide of Potassium.*

- R. Potassii Bromidi, gr. iij—viij;
 Aquæ, ℥j. Misce. Ter die sumendus.

Efficacious, according to the late Dr. ROBERT WILLIAMS, in reducing enlarged spleens.

44. *Guaiacum Mixture.*

- R. Tincturæ Guaiaci Compositæ, ℥iij;
 Tincturæ Opii, ℥ss;
 Misturæ Guaiaci, ℥vj. Misce. Capiat ℥j ter die.

In chronic skin diseases. It has also been highly extolled in cynanche tonsillaris.

45. *Quinine and Belladonna.*

- R. Quinæ Disulphatis, gr. j;
 Extracti Belladonnæ, gr. ¼;
 Camphoræ, gr. iij. Misce, fiat pilula ter die sumenda.

Useful in neuralgia.

46. *Sarsaparilla Mixture.*

- R. Syrupi Sarsæ, ʒvj;
 Extracti ejusdem, ʒij;
 Decocti Sarsæ Compositi, ʒxj. Misco. Capiat ʒij bis die.

47. *Anthony White's Gout Pill.*

- R. Hydrargyri Chloridi,
 Extracti Colchici Acetici,
 Extracti Aloes Purificati,
 Pulveris Ipecacuanhæ, aa gr. j. Misco, fiat pilula quartâ
 quâque horâ sumenda.

48. *Mercury, Squills, and Digitalis.*

- R. Pilulæ Hydrargyri, gr. fij;
 Pulveris Scillæ, gr. iiss;
 Pulveris Digitalis, gr. ss. Misco; fiat pilula bis vel ter die
 sumenda.

DR. BAILLIE.—*Recommended as an alterative and diuretic.*

49. *Bichloride of Mercury and Opium.*

- R. Hydrargyri Bichloridi, gr. ij;
 Pulveris Opii, gr. v—viij;
 Pulveris Guaiaci, ʒss. Misco. Fiant pilulæ xvj. Capiat j
 ter die.

In some forms of constitutional syphilis.

50. *Oxide of Silver.*

- R. Argenti Oxydi, gr. ss—j;
 Confectionis Opii, gr. iij. Misco, fiat pilula ter die sumenda.
In dyspepsia, pyrosis, hæmoptysis, menorrhagia, &c.

51. *Sulphite of Soda.*

- R. Sodæ Sulphitis, ʒss—j;
 Infusi Quassie, ʒiiss. Misco, fiat haustus ter die sumen-
 dus.
 DR. JENNER.—*In diseases of the stomach, accompanied by the forma-
 tion of the sarcinæ ventriculi. The patient should eat unfermented
 bread while taking this medicine.*

52. *Iodide of Mercury.*

- R. Hydrargyri Iodidi, gr. xij;
 Pulveris Zingiberis, ʒss;
 Confectionis Rosæ, quantum sufficiat, ut fiant pilulæ xij.
 Dosis una nocte manequæ statim post cibum.
In acnè, &c.

53. *Chloride of Bromium.*

R. Bromidi Chloridi, guttæ iij—iv ;
Pulveris Glycyrrhizæ, ʒj. Misce, secundum artem et divide
in pilulas viginti. Capiat unam bis terve die.

Recommended by LANDOLFI in cancer.

54. *Terchloride of Gold.*

R. Sodii Auro-terchloridi, gr. ij, solve in aquæ destillatæ, q. s.
Extracti Aconiti, gr. v ;
Extracti Dulcamaræ, ʒss ;
Altheæ radiolis in pulvere, q. s. Misce. Divide in pilulas
xl. quarum capiat unam ter in die.

GRÖTZNER.—*Said to be very efficacious in venereal skin affections.*

55. *Nitrate of Silver.*

R. Argenti Nitratæ, gr. j ;
Miccæ Panis, quantum placeat, ut fiat pilula bis die su-
menda.

To be taken on an empty stomach, for about ten days, in cases of idiopathic jaundice chiefly dependent upon gastro-duodenal disturbance rather than on disease of the liver.

56. *Muriate of Ammonia and Taraxacum.*

R. Ammoniæ Hydrochloratis, ʒj ;
Extracti Taraxaci, ʒss ;
Misturæ Camphoræ, ʒj. Misce, fiat haustus ter die su-
mendus.

In some cases of ascites dependent on cirrhosis, in jaundice, diminished secretion of bile, &c.

57. *Hydrochlorate of Ammonia.*

R. Ammoniæ Hydrochloratis, ʒss ;
Misturæ Camphoræ, ʒj. Misce. Ter die sumendus.

Said, by DR. WATSON, to be of benefit in some cases of face-ache, and pains about the jaw.

58. *Iodide of Potassium and Epsom Salts, &c.*

R. Potassii Iodidi, gr. xij ;
Vini Colchici, ʒjss ;
Tincturæ Hyoscyami, ʒj ;
Magnesiæ Sulphatis, ʒss ;
Misturæ Camphoræ, ad ʒvj. Misce. Dosis, pars sexta ter
die.

In some instances of gout with fever and constipation, the Author has found this mixture valuable.

59. *Chlorate of Potash.*

R. Potassæ Chloratis, ℥ij;
Misturæ Camphoræ, ℥vj. Misco. Capiat, ℥j ter die.
In inflammatory affections of the mouth.

60. *Chloride of Arsenic.*

R. Liquoris Arsenici Chloridi, ℥j;
Tincturæ Hyoscyami, ℥ss;
Misturæ Camphoræ, ℥vj. Misco. Dosis, pars sexta ter die, post cibum.
This is less likely to disorder the stomach and bowels than the liquor potassæ arsenitis.

III. ANTACIDS.

61. *Magnesia and Opium.*

R. Magnesiæ Carbonatis, ℥j;
Tincturæ Opii, ℥j;
Spiritus Ætheris Compositi, ℥ss;
Aquæ Menthæ Sativæ, ℥vj. Misco. Sumat coohlearia duo, dum flatus infestat.

62. *Magnesia and Soda.*

R. Magnesiæ Carbonatis,
Sodæ Carbonatis, aa ℥j;
Infusi Serpentariæ ℥j. Misco. Bis terve die sumendus.
In chronic urticaria.

63. *Bismuth Powders.*

R. Bismuthi Nitratis,
Magnesiæ Carbonatis, aa gr. x. Misco, fiat pulvis ter die sumendus.
Very useful in pyrosis, gastrodynia, &c.

64. *Ammonia and Chiretta.*

R. Spiritus Ammonię Aromatici, ℥xv;
Tincturæ Aurantii, ℥ij; Infusi Chirettæ, ℥j. Misco, fiat haustus mane meridiæque sumendus.
Useful in dyspepsia with acid eructations.

65. *Potash and Ammonia.*

R. Potassæ Bicarbonatis, ℥ij;
Spiritus Ammonię Aromatici, ℥ij;
Tincturæ Lupuli, ℥ss;
Infusi Lupuli, ℥vij. Misco. Capiat ℥j ter die.
In cardialgia.

66. *Ammonia, Potash, and Bark.*

R. Ammonię Sesquicarbonatis, ℥j;
 Potassę Chloratis, ℥ij;
 Extracti Opil, gr. vj;
 Decocti Cinchonę, ℥xij. Misce. Capiat ℥j, ter die.

In debility with acid secretions.

67. *Liquor Potassę and Buchu.*

R. Liquoris Potassę, ℥v—x;
 Tincturę Hyoscyami, ℥xx;
 Infusi Buchu, ℥iiss. Misce, fiat haustus ter die sumendus.

In catarrhus vesicę.

68. *Liquor Potassę and Salt.*

R. Liquoris Potassę,
 Sodii Chloridi, aa ℥j;
 Sodę Phosphatis, ℥iiss;
 Aquę, ℥iij. Misce.

Recommended by DR. SPURGIN, in the treatment of dyspepsia with excessive acidity and ejection of food. As much of the solution may be taken with the meals in tea, beer, &c., as will not affect the taste of the beverage disagreeably.—Lancet, 24th July, 1852.

69. *Potash and Aloes.*

R. Potassę Bicarbonatis, ℥ss;
 Tincturę Aurantii, ℥iij;
 Decocti Aloes Compositi, ℥viiij. Misce. Capiat oohlearia tria magna omni mane.

In chronic gout.

70. *Bicarbonate of Potash.*

R. Potassę Bicarbonatis, ℥ss;
 Aquę, ℥iiss. Misce, fiat haustus secundâ quâque horâ sumendus.

DR. GARROD uses this draught in all cases of acute rheumatism, continuing it until the joints are free from pain. It generally renders the urine alkaline in twenty-four hours.

71. *Potash and Lime-Water.*

R. Liquoris Potassę, ℥v—x;
 Liquoris Calcis, ℥iiss. Misce.

To be taken in an equal quantity of beef-tea two or three times daily.

IV. ANTISEPTICS.

72. *Solution of Chlorinated Soda.*

R. Liquoris Sodæ Chlorinatæ, ʒiij ;

Tincturæ Opii, ʒss ;

Misturæ Camphoræ, ʒviiij. Misco. Capiat ʒj ter die.

In gangrene of the lung, low fever, &c. It not only relieves the fetor, but acts as an alterative, &c. If necessary the opium should be omitted.

73. *Chlorine Gas.*

As a fumigating agent, antiseptic, and disinfectant, chlorine stands unrivalled. The ingredients for producing it should be contained in saucers placed in the higher parts of the room, as the gas which is developed will descend by its density, and soon become mixed with the surrounding air. Dr. Faraday adopted the following method at the Millbank Penitentiary : One part of common salt was intimately mixed with one part of the black or binoxide of manganese, and placed in a shallow earthen pan ; two parts of oil of vitriol previously diluted with two parts, by measure, of water, were then poured over it, and the whole stirred with a stick. Chlorine continued to be liberated from this mixture for four days.

74. *To Prepare Chlorine for Internal Administration.*

Put eight grains of chlorate of potass in a strong pint bottle, and pour upon them one drachm of strong hydrochloric acid. Close the mouth of the bottle until the violent action ceases, when add one ounce of water, and agitate well ; add another ounce, again shake, and continue this process until the bottle is full. ʒss or ʒj may be taken frequently, according to the age. An adult may use the whole pint in one day.

75. *Bark and Camphor.*

R. Infusi Cinchonæ,

Misturæ Camphoræ, ℥ ʒss. Misco.

To be taken every six hours by a nervous attendant in a sick-room. Its efficacy may be increased by the occasional addition of a glass of port wine.

76. *Chloride of Zinc.*

This substance is a most powerful caustic, which has long been used to destroy cancerous and other growths. It has been administered internally—dose gr. j, largely diluted, but without any benefit. It forms, however, a valuable disinfectant

gargle—gr. viij—xij to water ℥viij; or, in larger proportions, it is a most efficacious antiseptic. Sir W. Burnett's Disinfecting Fluid consists of gr. xxv of this salt to ℥j of water.

V. ANTISPASMODICS.

77. *Sulphuric Ether and Opium.*

R. Spiritus Ætheris Compositi, ℥ss;
Liquoris Opii Sedativi, ℥xx;
Tincturæ Castorei, ℥xv;
Aque Menthæ Piperitæ ad ℥iss. Misce, fiat haustus pro re nata sumendus.

78. *Vel.*

R. Spiritus Ætheris Compositi, ℥iss;
Liquoris Opii Sedativi, ℥ss—j;
Misturæ Camphoræ, ℥iij. Misce. Sumat ℥j omni quadrante horæ donec dolor exulaverit.

In spasmodic diseases, such as angina pectoris, &c.

79. *Carminatives and Ether.*

R. Spiritus Ætheris Compositi, ℥ij;
Tincturæ Cardamomi Compositæ, ℥iv;
Spiritus Anisi, ℥vj;
Olei Carui, ℥xij;
Syrupi Zingiberis, ℥iv;
Misturæ Camphoræ, ℥ij;
Aque Menthæ Piperitæ, ℥iv. Misce. Sumat cochlearia ij ampla, urgente flatu.

80. *Ammonia and Prussic Acid.*

R. Spiritus Ammonię Aromatici, ℥xv;
Acidi Hydrocyanici Diluti, ℥iij;
Tincturæ Cardamomi Compositæ, ℥j;
Syrupi Croci, ℥j;
Aque Carui, ℥j. Misce, fiat haustus bis terve die sumendus, urgente flatu aut languore.

In dyspepsia or debility, with irritable stomach.

81. *Assafœtida and Musk.*

R. Tincturæ Assafœtidæ, ℥ij;
Tincturæ Castorei,
Tincturæ Moschi, aa ℥j;
Tincturæ Opii, ℥ss. Misce. Sumat ℥xxx ex Aque Menthæ Piperitæ ℥j, secundis horis.

In hysterical paroxysms.

82. *Assafœtida and Ammonia.*

- R. Tincturæ Assafœtidæ, ℥ij;
 Ammonię Sesquicarbonatis, ℥j;
 Aquæ Pulegii, ℥iv. Fiat mistura, de quâ capiat cochleare
 unum vel cochlearia duo in languoribus.

83. *Valerian Draught.*

- R. Spiritus Ammonię Fœtidæ, ℥xv;
 Tincturæ Valerianæ, ℥ss;
 Infusi Valerianæ, ℥j. Misce, fiat haustus pro re natâ
 sumendus.

In hysteria.

84. *Lobelia, Ether, &c.*

- R. Tincturæ Lobeliæ Ætheris, ℥ij;
 Vini Ipecacuanhæ, ℥iss;
 Misturæ Ammoniaci, ℥vj. Misce. Capiat ℥j omnibus
 sextis horis.

In the dyspnœa of asthma, when there is vesicular emphysema.

85. *Ammonia and Opium.*

- R. Spiritus Ammonię Fœtidæ, ℥ss;
 Tincturæ Opii, ℥x;
 Misturæ Camphoræ, ℥j. Misce.

86. *Nitric Acid Mixture.*

- R. Acidi Nitrici Diluti, ℥xij;
 Tincturæ Cardamomi Compositæ, ℥ijj.
 Syrupi Simplicis, ℥iiss;
 Aquæ, ℥j. Misce. Sumat ℥j—ij secundâ quâque horâ.
 DR. GIBB states that nitric acid is a specific in the treatment of
 whooping-cough, curing the disease in from two to fifteen days. He
 recommends this formula.

87. *Valerian and Assafœtida.*

- R. Tincturæ Valerianæ Compositæ,
 Tincturæ Assafœtidæ, aa ℥ij;
 Misturæ Camphoræ, ℥vss. Misce. Sumat quartam partem
 quartâ quâque horâ.

In hysteria, flatulent colic, and similar cases.

88. *Ammonia and Ether Draught.*

- R. Spiritus Ætheris Compositi, ℥ss;
 Spiritus Ammonię Aromatici, ℥xv;
 Misturæ Camphoræ, ℥j. Misce, fiat haustus, quartâ quâ-
 que horâ sumendus.

To relieve dyspnœa and great depression.

89. *Tincture of Sumbul.*

℞. Sumbulii Radicis, ℥iv;
Spiritus Ætheris Compositi, ℥iv.

Macerate in a stoppered bottle for seven days, and then filter.

Dose ℥xx—℥ss.

In hysteria, nervous pains, &c.

VI. ASTRINGENTS.

90. *Rhatany Mixture.*

℞. Infusi Kramerie, ℥viii;
Tincturæ Opii, ℥j. Fiat mistura, cujus sumantur cochlearia tria magna post singulas liquidas dejectiones.

A useful astringent in common diarrhœa.

91. *Bismuth Mixture.*

℞. Bismuthi Nitratis, ℥j;
Misturæ Acaciæ, ℥vj. Misce, fiat mistura. Sumat ℥j ter die.

Recommended by DR. THEOPHILUS THOMPSON as very useful in checking the diarrhœa of phthisis.

92. *Catechu, Opium, and Chalk.*

℞. Tincturæ Catechu Compositæ, ℥iij;
Confectionis Aromatici, ℥ss;
Tincturæ Opii, ℥ss—j;
Misturæ Cretæ, ℥vj. Misce. Capiat ℥j post singulas liquidas sedes.

Very efficacious in checking simple diarrhœa. In some instances a dose of castor oil (℥ss) should be given four hours before commencing this mixture.

93. *Sulphuric Acid and Opium.*

℞. Acidi Sulphurici Diluti, ℥j;
Tincturæ Opii, ℥ss;
Infusi Quassie, ℥vj. Misce. Sumat ℥j ter die.

94. *Sesquichloride of Iron and Calumba.*

℞. Tincturæ Ferri Sesquichloridi, ℥xv;
Infusi Calumbæ, ℥j. Misce, fiat haustus quârtâ quâque horâ sumendus.

95. *Oil of Turpentine.*

℞. Olei Terebinthinæ, ℥x;
Mistura Amygdalæ, ℥j. Misce, fiat haustus omni hora sumendus.

In severe hæmoptysis, especially in weak cachectic individuals.

96. *Soda and Turpentine.*

- R. Mucilaginis Acaciæ, ℥ss;
 Sodæ Sesquicarbonatis, gr. x;
 Olei Terebinthinæ, ℥xv;
 Aquæ Destillatæ, ℥j. Misce, fiat haustus ter die sumendus.

In passive hæmatemesis.

97. *Gallic Acid.*

- R. Acidii Gallici, gr. x—xv. R̄x aquâ ℥iss, quartâ quâque horâ sumendus.

98. *Catechu Draught.*

- R. Tincturæ Catechu Compositæ, ℥ss;
 Confectionis Aromatici, gr. xv;
 Infusi Catechu Compositi, ℥j. Misce, fiat haustus ter die sumendus.

99. *Gallic Acid and Opium.*

- R. Acidii Gallici, gr. xij;
 Pulveris Opii, gr. ½. Misce, fiat pulvis omnibus sextis horis sumendus.

A valuable astringent in hæmoptysis.

100. *Cinnamon and Sulphuric Acid.*

- R. Tincturæ Cinnamomi Compositæ, ℥ij;
 Acidii Sulphurici Diluti ℥v. Misce. Sumat guttas xx ter quaterve in die ex cyatho aquæ.

A very useful astringent in passive hæmorrhages from kidneys, bladder, uterus, &c.

101. *Cinnamon Draught.*

- R. Tincturæ Cinnamomi Compositæ, ℥j;
 Aquæ Cinnamomi, ℥j. Misce, fiat haustus ter in die sumendus.

In menorrhagia especially, but also in other varieties of passive hæmorrhage. See a Paper by the Author, in Lancet, 15th October, 1853.

102. *Matico and Rhatany.*

- R. Tincturæ Matico, ℥vj;
 Infusi Krameriæ, ℥vij;
 Syrupi Croci, ℥ij. Misce, fiat mistura cujus capiat semunciam tertiis vel quartis horis.

NELIGAN.—In the diarrhæa of phthisis, &c.

103. *Catechu and Tormentilla.*

R. Tincturæ Catechu Compositæ, ℥ij;
Decocti Tormentillæ, ℥vj. Misco. Sumat ℥j ter quaterve
indies.

In chronic diarrhæa and dysentery.

104. *Sulphate of Copper and Opium.*

R. Cupri Sulphatis,
Pulveris Opii, aa gr. ss;
Extracti Gentianæ, gr. iij. Misco, fiat pilula ter die su-
menda.

In obstinate diarrhæa.

105. *Nitrate of Silver and Opium.*

R. Argenti Nitratis, gr. ½;
Extracti Opii, gr. ij. Misco, fiat pilula nocte maneque su-
menda.

In very obstinate diarrhæa when opium agrees.

106. *Acetate of Lead and Opium.*

R. Plumbi Acetatis, gr. j—ij;
Pulveris Opii, gr. ½;
Extracti Hyoscyami, gr. ij. Misco, fiat pilula omnibus
sextis horis sumenda.

*In hæmoptysis, hæmatemesis, &c. DR. GRAVES recommends that
this pill should be taken every half hour in cases of Asiatic cholera.*

107. *Cascarilla and Squills.*

R. Tincturæ Soillæ, ℥iss;
Acidi Sulphurici Diluti, ℥j;
Tincturæ Opii, ℥ss;
Infusi Cascarillæ, ℥vj. Misco. Sumat ℥j ter die.

In chronic bronchitis with profuse expectoration.

108. *Alum Mixture for Infants.*

R. Aluminis, gr. xvj;
Syrupi Rhoeados, ℥ij;
Aquæ, ℥ij. Misco. Sumat ℥j secundâ vel tertiâ quâque
horâ.

Useful where the secretion from the bronchial tubes is excessive.

109. *Oxide of Zinc.*

R. Zinci Oxidi, gr. iv;
Extracti Hyoscyami, gr. iij. Misco, fiat pilula horâ somni
sumenda.

*Recommended by DR. THEOPHILUS THOMPSON for the relief of night-
sweats in phthisis. The author can confirm the recommendation.*

110. *Bismuth and Dover's Powder.*

- R. Bismuthi Nitratis, gr. x;
 Pulveris Ipecacuanhæ Compositi, gr. v. Misce, fiat pulvis
 omni nocte sumendum.

As a sedative and astringent in the diarrhœa of phthisis.

111. *An Astringent Enema.*

- R. Olei Terebinthinæ, ℥ss;
 Tincturæ Catechu Compositæ, ℥ij;
 Tincturæ Opil, ℥xv;
 Decocti Amyli, ℥ij. Misce, fiat enema.

*Recommended by DR. BRINTON to check the purging in typhoid fever.
 It may be employed twice or thrice daily, if necessary.*

112. *Chloroform, Opium, and Castor Oil.*

- R. Chloroformyli, ℥vj;
 Olei Ricini, ℥ij;
 Tincturæ Opil, ℥xx;
 Misturæ Acaciæ ad ℥iss. Misce, fiat haustus statim sumendus.

In cholera; diarrhœa.

113. *Alum and Sulphuric Acid.*

- R. Aluminis Exsiccati, ℥j;
 Syrupi Rheados, ℥iss;
 Infusi Rosæ Compositi ad ℥xij. Misce. Capiat ℥j, omnibus sextis horis.

In passive hemorrhage. Also in some cases of lead colic.

114. *Acetate of Lead and Opium.*

- R. Plumbi Acetatis, gr. iij;
 Confectionis Opil, gr. ij. Misce, ut fiat pilula omni hora sumenda cum haustu sequente.
 Acidi Acetici Diluti, ℥j;
 Aquæ, ℥j. Misce.

In severe hæmoptysis.

115. *Cinnamon and Logwood.*

- R. Tincturæ Cinnamomi Compositæ, ℥ss;
 Decocti Hamatoxyli, ℥vj. Misce. Capiat ℥j post singulas liquidas sedes.

116. *Sulphuric Acid and Ether.*

- R. Acidi Sulphurici Diluti, ℥xx;
 Spiritûs Ætheris Compositi, ℥xv;
 Syrupi, ℥j;
 Aquæ, ℥iss. Misce, fiat haustus sæpe sumendus.

VII. BATHS.

117. *Temperature of Simple Baths.*

BATH.	WATER.	VAPOR.	
		Not Breathed.	Breathed.
Tepid Bath .	85° to 92°	96° to 106°	90° to 100°
Warm Bath .	92° — 98°	106° — 120°	100° — 110°
Hot Bath .	98° — 106°	120° — 160°	110° — 130°

118. *Nitro-muriatic Acid Bath.*

R. Acidi Nitrici, ℥iiss;
 Acidi Hydrochlorici, ℥iiss;
 Aquæ calidæ, cong. xx. Misce.

To be prepared in a wooden bath. The patient should remain in it from ten to twenty minutes. Useful in cases where the liver is inactive.

119. *Alkaline Bath.*

R. Sodæ Carbonatis, lb. $\frac{1}{4}$;
 Aquæ ferventis, cong. xxx. Misce.

In the lithic acid diathesis, chronic rheumatism, &c.

120. *Compound Conium Bath.*

R. Extracti Conii, ℥ij;
 Pulveris Amyli, lb. j;
 Aquæ ferventis, cong. xxx. Misce, fiat balneum.

PHARMACOPŒIA, HOSPITAL FOR SKIN DISEASES.—*Useful in certain skin diseases attended with great irritability.*

121. *Creasote Bath.*

R. Creasoti, ℥ij;
 Glycerinæ, ℥ij;
 Aquæ ferventis, cong. xxx. Misce.

PHARMACOPŒIA, HOSPITAL FOR SKIN DISEASES.—*In cutaneous diseases attended with much irritation.*

122. *Iodine Bath.*

R. Iodinii, ℥j;
 Liquoris Potassæ, ℥ij;
 Aquæ calidæ, cong. xxx. Misce.

In scrofula, chronic rheumatism, secondary syphilis, and certain skin diseases.

123. *Sulphur Bath.*

R. Potassii Sulphureti, ℥iv;
 Aquæ calidæ, cong. xxx. Miscoe.

Useful in scabies, lead colic, paralysis from lead, &c.

124. *Compound Sulphur Bath.*

R. Sulphuris Præcipitati, ℥iv;
 Sodæ Hyposulphitis, ℥j;
 Acidii Sulphurici, ℥ss;
 Aquæ calidæ, cong. xxx. Miscoe.

125. *Tepid Salt-water Sponging Bath.*

R. Salis Marini, lb. $\frac{1}{4}$;
 Aquæ tepidæ, cong. iv. Miscoe, fiat balneum omni mane
 utendum.

In general debility, chronic rheumatism, &c. The surface of the body should be well rubbed with a flesh-brush.

126. *Sea-water Bath.*

R. Salis Marini, lb. $\frac{1}{4}$;
 Magnesiæ Sulphatis, ℥ij;
 Liquoris Calci Chloridi, ℥j;
 Aquæ, cong. xxx. Miscoe.

127. *The Mercurial Vapour Bath.*

The patient is placed on a chair, and covered with an oil-cloth lined with flannel, which is supported by a proper framework. Under the chair are placed a copper bath containing water, and a metallic plate on which is placed from one to three drachms of the bisulphuret of mercury, or the same quantity of the gray oxide, or the binocide. Under each of these a spirit lamp. The patient is thus exposed to the influence of three agents—heated air, steam, and the vapor of mercury. At the end of five to ten minutes perspiration commences, which becomes excessive in ten or fifteen minutes longer. The lamps are now to be extinguished; and when the patient has become moderately cool, he is to be rubbed dry. He should then drink a cup of warm decoction of guaiacum or sarsaparilla, and repose for a short time.

LANGSTON PARKER.—*In constitutional syphilis when mercury is indicated. This method of introducing mercury into the system may also be adopted with benefit in other diseases in place of administering the metal by the mouth.*

128. *Vel.*

MR. HENRY LEE's mode of proceeding is more simple. Two small lamps are procured, in which the methylated spirit (much

cheaper than spirits of wine) is used ; over the first lamp is a thin metallic plate, upon which the ten grains of calomel are placed ; over the second lamp is a small cup of hot water. A common cane-bottomed chair is placed over the lamps, and the patient sits upon it. He is then enveloped, chair and all, in a blanket ; at the expiration of a quarter of an hour or twenty minutes he rolls himself up in the blanket and goes to bed.

129. *Acid Footbath.*

R. Acidi Nitrici, ℥j ;
Acidi Hydrochlorici, ℥iss ;
Aquæ calidæ (96°), cong. iv. Misce, fiat pediluvium.

In dyspepsia, with derangement of the liver and constipation. It must be used in a wooden or china vessel.

130. *Mustard Footbath.*

R. Pulveris Sinapis, ℥ij—iv ;
Aquæ calidæ, cong. iv. Misce, pro pediluvium.

In congestions of the head and chest, in some cases of amenorrhæa, &c.

VIII. CATHARTICS AND ANTHELMINTICS.

131. *The Common Black Draught.*

R. Magnesiæ Sulphatis, ℥ij ;
Mannæ, ℥j ;
Tincturæ Sennæ Compositæ, ℥ij ;
Infusi Sennæ Compositi ad ℥iss. Misce, fiat haustus cras mane sumendus.

132. *Calomel and Jalap, &c.*

R. Hydrargyri Chloridi, gr. v ;
Pulveris Jalapæ, gr. xv. Misce, fiat pulvis statim sumendus, cum haustu sequente post horas tres.

R. Magnesiæ Sulphatis, ℥ij ;
Mannæ Optimæ, ℥j ;
Tincturæ Sennæ Compositæ, ℥ij ;
Infusi Sennæ Compositi ad ℥iss. Misce.

A good active purgative in head affections.

133. *The White Mixture of Hospitals.*

R. Magnesiæ Sulphatis, ℥ij ;
Magnesiæ Carbonatis, ℥j ;
Aquæ Menthæ Piperitæ, ℥j. Misce, fiat haustus omni mane sumendus.

134. *Epsom Salts and Sulphuric Acid.*

R. Magnesiæ Sulphatis, ℥iss—iij;
 Acidi Sulphurici Diluti, ℥iij;
 Tincturæ Hyoscyami, ℥ij;
 Infusi Quassia, ℥xij. Misco. Sumat ℥j bis vel ter in die
Very useful in painter's colic.

135. *Aloes, Senna, and Jalap.*

R. Tincturæ Sennæ Compositæ,
 Tincturæ Jalapæ, aa ℥ij;
 Infusi Sennæ Compositi, ℥ij;
 Decocti Aloes Compositi, ℥vss. Misco. Sumat ℥j nocte
 maneque.

136. *Rhubarb, Gentian, and Senna.*

R. Tinctura Rhei Compositæ, ℥ij;
 Misturæ Gentianæ Compositæ, ℥x. Misco, fiat haustus
 omni mane sumendus.
A mild purgative in dyspepsia, &c.

137. *An Alkaline Aperient.*

R. Decocti Aloes Compositi,
 Infusi Gentianæ Compositi, aa ℥iij;
 Liquoris Potassæ, ℥j. Misco. Sumat cochlearia magna
 omni mane.
Useful in bilious headache.

138. *A Warm Aperient.*

R. Extracti Rhei, gr x;
 Sodæ Phosphatis, ℥j;
 Decocti Aloes Compositi, ℥ss;
 Aquæ Pimentæ, ℥j. Misco, fiat haustus hora somni su-
 mendus.
 DR. GAIRDNER.—*Useful in some cases of gout.*

139. *Aloes, Senna, and Epsom Salts.*

R. Vini Aloes, ℥ij;
 Infusi Sennæ Compositi, ℥iss;
 Magnesiæ Sulphatis, ℥iv. Misco. Hujus capiat unciam,
 horâ septimâ matutinâ; et circiter horam decimam,
 partem reliquam sumat, si opus fuerit.

140. *Tonic and Aperient.*

R. Infusi Gentianæ Compositi, ℥vj;
 Acidi Sulphurici Diluti, ℥j;
 Magnesiæ Sulphatis, ℥j. Misco. Capiat cochlearia tria
 magna post jentaculum et post prandium quotidie.
Useful in habitual constipation with flatulence.

141. *Jalap and Senna.*

- R. Tincturæ Sennæ, ℥j;
 Tincturæ Jalapæ, ℥ij;
 Aquæ Pimentæ, ℥ij. Misce. Capiat dimidium statim, et
 semihorâ elapsâ, quod reliquum est.

142. *Saline Purgative.*

- R. Vini Antimonii Potassio-tartratis, ℥iss;
 Magnesiæ Sulphatis, ℥ss;
 Syrupi Papaveris, ℥iij;
 Liquoris Ammoniæ Citratis, ℥iss;
 Misturæ Camphoræ, ℥vss. Misce. Capiat ℥j bis terve
 indies.

143. *Sulphur and Magnesia.*

- R. Magnesiæ Carbonatis, ℥j;
 Sulphuris Præcipitati, ℥ss. Misce, fiat pulvis primo mane
 ex lacte vel aqua sumendus.

A useful purgative for delicate females.

144. *Steel and Aloes.*

- R. Ferri Sulphatis, gr. ij;
 Pilulæ Aloes cum Myrrhæ, gr. iij. Misce, fiat pilula ter
 die sumenda.

In amenorrhœa, chlorosis, hysteria with debility, &c.

145. *An Alkaline Purgative.*

- R. Sodæ Sulphatis, ℥iss;
 Sodæ Phosphatis, ℥j;
 Syrupi Rhamni, ℥ss;
 Aquæ Menthæ Piperitæ, ℥vj. Misce. Sumat unciam sta-
 tim, et repetatur dosis post horas duas, nisi alvus prius
 responderit.

146. *Epsom Salts and Taraxacum.*

- R. Magnesiæ Sulphatis, ℥ij;
 Decocti Taraxaci, ℥iss. Misce, fiat haustus omni mane
 sumendus.

In constipation with deficient secretion of bile.

147. *Aloes and Galbanum.*

- R. Pilulæ Aloes cum Myrrhæ,
 Pilulæ Galbani Compositæ, aa gr. v. Misce fiant pilulæ ij
 nocte maneque sumendæ.

In hysteria with flatulence.

148. *A Drastic Purgative.*

R. Extracti Elaterii, gr. $\frac{1}{4}$;
 Extracti Gentianæ, gr. iij. Misce, fiat pilula omni nocte
 sumenda.

*In dropsical effusions, and in cases where we wish to produce copious
 watery stools.*

149. *Vel.*

R. Pilulæ Cambogiæ Compositæ, gr. v—x. Omni nocte su-
 mendæ.

150. *Vel.*

R. Pulveris Jalapæ Compositæ, \mathfrak{Dj} —ij. Omni mane sumendus.

151. *A Warm Stomachic Aperient.*

R. Tincturæ Rhei, \mathfrak{Zj} ;
 Tincturæ Gentianæ, \mathfrak{Zss} ;
 Syrupi Croci, \mathfrak{Zj} ;
 Aquæ Pimentæ, \mathfrak{Ziv} . Fiat mistura, cujus sumat æger
 coohlearia duo, urgente ventriculi dolore, flatu, nausâ
 vel languore.

152. *Sulphate of Manganese and Colchicum.*

R. Manganisæ Sulphatis, \mathfrak{Ziv} ;
 Vini Colchici, \mathfrak{mxxv} ;
 Misturæ Camphoræ, \mathfrak{Zj} . Misce, fiat haustus.

A useful purgative in gout, chronic rheumatism, &c.

153. *Aperient and Sedative.*

R. Misturæ Acaciæ, \mathfrak{Zij} ;
 Aquæ Cinnamomi, \mathfrak{Ziij} ;
 Olei Ricini, \mathfrak{Ziss} ;
 Tincturæ Rhei, \mathfrak{Zvj} ;
 Tincturæ Opii, \mathfrak{Zss} ;
 Syrupi Aurantii, \mathfrak{Zvj} . Misce. Sumat unciam tertiis horis.
In dysentery.

154. *Saline Aperient Mixture.*

R. Potassæ Tartratis, \mathfrak{Zj} ;
 Tincturæ Jalapæ,
 Tincturæ Sennæ Compositi, aa \mathfrak{Ziv} ;
 Syrupi Rhamni, \mathfrak{Zij} ;
 Infusi Sennæ Compositi, \mathfrak{Zv} . Sumat partem quartam,
 quartâ quâque horâ donec alvus plene soluta sit.

155. *Rhubarb and Magnesia.*

- R. Magnesie Carbonatis, ℥ij;
 Pulveris Rhei, ℥j;
 Aquæ Menthæ Piperitæ, ℥vj. Misce. Capiat ℥j omni mane.

156. *Calomel and Scammony.*

- R. Hydrargyri Chloridi, gr. ij—iij;
 Pulveris Scammonii Compositi, gr. iv;
 Pulveris Zingiberis, gr. j. Misce, fiat pulvis.
A valuable purgative in the head affections of children, and in intestinal worms.

157. *A Ferruginous Purgative.*

- R. Magnesie Sulphatis, ℥ij;
 Ferri Sulphatis, gr. iv;
 Acidi Sulphurici Diluti, ℥xv;
 Infusi Quassie, ℥iss. Misce, fiat haustus, cras primo mane sumendus.
 DR. RIGBY.—*In constipation with general debility.*

158. *Colocynth and Tartar Emetic.*

- R. Pilulæ Colocynthidis Compositæ, ℥ij;
 Pulveris Antimonii Compositi, ℥j;
 Extracti Hyoscyami, gr. vj. Misce. Divide in pilulas xij. Sumat j omni nocte.
A useful purgative pill in persons threatened with apoplexy.

159. *Croton Oil.*

- R. Olei Crotonis, ℥j—ij;
 Olei Caryophylli, ℥j;
 Micæ Panis, quantum sufficiat ut fiat pilula statim sumenda, et horis duabus repetenda, si opus sit.

160. *Croton Oil, Colocynth, and Galbanum.*

- R. Olei Crotonis, ℥j vel ij;
 Pilulæ Colocynthidis Compositæ, ℥ss;
 Pilulæ Galbani Compositæ, ℥j. Misce, et divide in pilulas xvij. Sumat pilulæ iij omni nocte.
 SIR CHARLES BELL and others have cured some obstinate cases of neuralgia with these pills.

161. *Seidlitz Powder.*

- R. Sodæ Carbonatis, ℥j;
 Sodæ Potassio-tartratis, ℥ij. Misce, et fiat haustus effervesceus cum
 Acidi Tartarici, gr. xvij;
 Aquæ, ℥ij.

162. *Ammonia with Osgall.*

R. Ammonia Sesquicarbonatis, gr. xxiv;
 Fellis Bovini Inspissati, ʒss;
 Mucilaginis Acaciae, q. s. Misce, fiat pilulæ duodecim.
 Capiat unam ter in die.

In dyspepsia with vomiting, constipation, and deposit of lithates in the urine.

163. *Calomel and Jalap.*

R. Hydrargyri Chloridi, gr. ij;
 Pulveris Jalapæ, gr. iij;
 Sacchari Purificati, gr. iv. Misce, fiat pulvis.

A purgative for children in head affections, or where there are worms.

164. *Calomel and Rhubarb.*

R. Pulveris Rhei, ʒj;
 Hydrargyri Chloridi, gr. v;
 Syrupi Althææ, quantum sufficiat ut fiat bolus horâ somni sumendus.

165. *Rhubarb and Blue Pill.*

R. Pilulæ Hydrargyri,
 Pilulæ Rhei Compositæ,
 Extracti Hyoscyami, ʒʒ gr. iij. Misce, fiat pilulæ duæ alternâ quâque nocte sumendæ.

166. *Colocynth and Blue Pill.*

R. Pilulæ Hydrargyri,
 Pilulæ Colocynthidis Compositæ,
 Extracti Hyoscyami, ʒʒ gr. iij. Misce, fiat pilulæ duæ pro re natâ sumendæ.

167. *Colocynth and Assafætida.*

R. Pilulæ Colocynthidis Compositæ, gr. viij;
 Assafetidæ, gr. iij. Misce, fiat pilulæ duæ pro re natâ sumendæ.

In constipation with flatulence. A useful purgative for hypochondriacs.

168. *Gamboge and Blue Pill.*

R. Pilulæ Cambogiæ Compositæ, gr. v;
 Pilulæ Hydrargyri, gr. iij. Misce, fiat pilulæ duæ nocte
 maneque sumendæ.

In ascites, &c., where a drastic purgative is required.

169. *Calomel and Opium.*

R. Hydrargyri Chloridi, gr. x;
 Pulveris Opii, gr. ij. Misce, fiat pulvis.

In intestinal obstruction, &c., as a purgative.

170. *Purgative Mixture for Infants.*

R. Pulveris Rhei, gr. xv;
 Magnesiæ Carbonatis, ℥j;
 Aquæ Anethi, ℥iiss. Misce, fiat julepum, cujus unum
 coohleare minimum infantulo lactanti detur, secundis
 horis.

171. *Sulphate of Zinc.*

R. Zinci Sulphatis, gr. v;
 Micæ panis, quantum sufficiat, ut fiat pilula ter die su-
 menda.

*Recommended by MR. BALY, in habitual constipation, after the bowels
 have been cleared out with a purgative of calomel and colocynth.
 The pill should be taken immediately after a meal, for two or three
 weeks.*

172. *Quinine and Rhubarb.*

R. Quinæ Disulphatis, gr. ij; -
 Pilulæ Rhei Compositæ, gr. iij. Misce.

A good dinner pill, in some forms of dyspepsia.

173. *Ipecacuanha and Rhubarb.*

R. Pulveris Ipecacuanhæ, gr. ss—gr. j;
 Pulveris Rhei, gr. iij;
 Confectionis Rosæ, q. s. ut fiat pilula. To be taken just
 before dinner.

*Very useful in removing the uneasiness and sense of oppression after
 meals—resulting from slow digestion.*

174. *Kousso.*

R. Kousso, in pulvere, ℥v;
 Mellis, quantum sufficiat ut fiat Electuarium. This is suf-
 ficient for two doses: the second being required three
 hours after the first.

In cases of tapeworm, when less expensive drugs fail.

175. *Elaterium and Calomel.*

- R. Extracti Elaterii, gr. iss;
 Pulveris Capsici, gr. vj;
 Hydrargyri Chloridi, gr. xij;
 Extracti Gentianæ, ℥ss;
 Sacchari fœcis quantum sufficiat ut fiant pilulas duodecim.
 Sit dosis pil. j vel ij.

The Elaterium may be increased to twelve grains, if a very active drastic purge is required. The Capsicum prevents the nausea which Elaterium usually causes.

176. *Nux Vomica and Colocynth.*

- R. Extracti Hyoscyami, ℥ij;
 Pilulæ Colocynthidis Compositæ, ℥j;
 Extracti Nucis Vomicae, gr. iij. Misce, ut fiat massa, in pilulas duodecim dividenda. Capiat pilulas duas omni nocte.

In habitual constipation. They may be continued for about ten days.

177. *The Cheltenham Waters.*

- R. Ferri Sulphatis, gr. x;
 Sodæ Sulphatis,
 Magnesiae Sulphatis, aa ℥j;
 Sodii Chloridi, ℥ij;
 Aquæ, Oj. Misce. Sumat ℥ij in aquâ calidâ ℥x primo mane.

In debility with constipation.

178. *Turpentine Anthelmintic.*

- R. Olei Ricini, ℥ss;
 Olei Terebinthinæ, ℥j. Misce, fiat haustus primo mane sumendus.

In tape-worm, &c.

179. *Pomegranate Anthelmintic.*

- R. Decocti Granati Radicis, ℥j. Omni semihora sumendus usque dosis vj.

180. *Oil of Male Fern.*

- R. Olei Filicis Maris, ℥iss;
 Syrupi Zingiberis, ℥ij;
 Misturæ Acaciæ, ℥iss. Misce, fiat haustus primo mane sumendus.

An excellent anthelmintic, especially for tape-worms.

181. *Simple Enema.*

R. Sodii Chloridi, ℥j;
Decocti Hordei, ℥xij. Misco, fiat enema.

In simple constipation, to destroy ascarides, &c.

182. *Castor-oil and Rue Enema.*

R. Confectionis Rutæ, ℥j;
Olei Ricini, ℥j;
Decocti Avenæ, ℥vij. Misco.

Exceedingly useful in flatulent distension of the intestines.

183. *Steel Enema.*

R. Tincturæ Ferri Sesquichloridi, ℥ss;
Aquæ, ℥viij. Misco.

To destroy ascarides, a dose of calomel and jalap being administered at the same time.

184. *Tobacco Enema.*

R. Tabaci Communis, gr. xv;
Aquæ Bullientis, ℥viij. Macera per horam, et cola.

To be employed cautiously in some cases of ileus, strangulated hernia, obstinate constipation, &c.

185. *Turpentine and Castor-oil Enema.*

R. Olei Ricini,
Olei Terebinthinæ, aa ℥iss;
Tincturæ Assafoetidæ, ℥ij;
Decocti Avenæ, ℥xij. Misco, fiat enema.

In obstinate constipation. It should be thrown up by means of a long tube; a stomach-pump tube will suffice.

186. *Croton-oil Enema.*

R. Olei Ricini,
Olei Terebinthinæ, aa ℥j;
Olei Crotonis, ℥vj;
Decocti Avenæ, ℥iv. Misco, fiat enema.

In obstinate constipation. To be thrown into the rectum and retained there.

187. *Purgative Electuary.*

R. Confectionis Sennæ, ℥iss;
Pulveris Jalapæ, ℥ss;
Sulphuris Præcipitati, ℥ss;
Syrupi Sennæ, q. s. ut fiat electuarium. Sumat ℥j nocte maneque.

IX. CAUSTICS, AND COUNTER-IRRITANTS.

188. *The Acid Nitrate of Mercury.*

R. Hydrargyri, ʒj;
Acidi Nitrici (sp. gr. 1040), ʒij. Solve.

PHARMACOPŒIA, HOSPITAL FOR CUTANEOUS DISEASES.—*A caustic paste for cancer or lupus; useful also in sloughing ulcers, boils, small nævi, &c. It is to be applied by means of a glass rod or brush.*

189. *Landolfi's Paste.*

R. Bromii Chloridi,
Zinci Chloridi,
Auri Chloridi,
Antimonii Chloridi, partes æquales. Mix into a paste of sufficient thickness with flour or powdered liquorice.

To destroy cancerous growths.

190. *Chloride of Zinc.*

R. Sanguinariæ Canadensis, ʒss—ʒj;
Zinci Chloridi, ʒss—ʒij;
Aquæ, ʒij;
Farinæ, quantum sufficiat. Misce.

The paste thus formed should have the consistence of treacle. This is the caustic employed by DR. FELL.

191. *Chloride of Zinc Paste.*

R. Zinci Chloridi, ʒss—ʒj;
Farinæ, ʒj;
Aquæ Destillatæ, q. s. Fiat massa, quâ pars morbida exedatur.

192. *Depilatory Powder.*

R. Calcis recentis, ʒiv;
Arsenici Sulphureti Flavi, ʒj;
Pulveris Amyli, ʒiij. Misce, fiat pulvis.

193. *Nitric Oxide of Mercury Powder.*

R. Hydrargyri Nitrici Oxydi,
Aluminis, aa ʒj. Misce, fiat pulvis.

Sprinkled over exuberant and spongy granulations.

194. *Carbonate of Copper Ointment.*

R. Cupri Carbonatis, ʒj;
Adipis preparatæ, ʒss. Misce, fiat unguentum.

DEVERGIE.—*In chronic eczema and impetigo of the scalp where stimulating applications are required.*

195. *Dupuytren's Powder.*

R. Acidi Arseniosi, gr. xij;
Hydrargyri Chloridi, ʒj. Misce.

In ulcerated lupus.

196. *Vienna Caustic.*

R. Potassæ Hydratis,
Calois, singularum unciam. Tere simul.

This paste is diluted with alcohol, and applied with a spatula over a small surface. It is identical with the Potassa cum Calce of the London Pharmacopœia.

197. *Iodine Paint.*

R. Iodinii, ʒj;
Potassii Iodidi, ʒss;
Spiritus Vini Rectificati, ʒj. Misce.

To be applied with a camel's hair pencil. Very useful in all chronic pains.

198. *Tartar Emetic Embrocation.*

R. Antimonii Potassio-tartratis, ʒij;
Aquæ Rosæ, ʒij. Solve dein adde
Tincturæ Cantharidis, ʒj. Misce, fiat embrocatio.

To be employed if the unguentum antimonii potassio-tartratis (Phar. Lond.) fails to produce the required eruption.

X. DIAPHORETICS.

199. *Nitre and Ipecacuanha.*

R. Potassæ Nitratis, ʒj;
Vini Ipecacuanhæ, ʒiss;
Decocti Hordei Compositi, Oj. Misce.
Signetur.—One teacupful every two hours.

In severe catarrh with sore throat.

200. *Antimony and Opium.*

R. Vini Antimonii Potassio-tartratis, ʒj—ij;
Tincturæ Opil, ʒss;
Liquoris Ammonia Acetatis, ʒij;
Misturæ Camphoræ, ʒiv. Misce. Sumat ʒj ter die.

201. *Dover's Powder and Antimony.*

R. Pulveris Ipecacuanhæ Compositi, gr. v;
Antimonii Potassio-tartratis, gr. ʒ. Misce, fiat pulvis
omnibus sextis horis sumendus.

202. *A Substitute for Dover's Powder.*

- R. Pulveris Opii, gr. j ;
 Pulveris Ipecacuanhæ, gr. j ;
 Potassæ Nitratis, gr. viij. Misce, fiat pulvis hora somni sumenda.

203. *Infantile Cough Mixture.*

- R. Vini Ipecacuanhæ, ℥ij ;
 Syrupi Papaveris, ℥iij ;
 Misturæ Acaciæ, ℥xij. Misce. Capiat ℥j tertiâ quâque horâ.

204. *Senega and Guaiacum.*

- R. Tincturæ Guaiaci Compositæ, ℥vj ;
 Misturæ Acaciæ, ℥j ; tera simul et adde
 Decocti Senegæ, ℥v. Misce. Sumat ℥j ter die.
Diaphoretic, diuretic, stimulant, and expectorant. Useful in the latter stages of bronchitis, tonsillitis, &c.

205. *Tartar Emetic Mixture for Children.*

- R. Vini Antimonii Potassio-tartratis, ℥iij ;
 Vini Ipecacuanhæ, ℥ij ;
 Syrupi Papaveris, ℥j ;
 Liquoris Ammoniæ Citratis, ℥j ;
 Misturæ Camphoræ, ℥iij. Misce. Sumat ℥ss omni horâ.
A depressing mixture for children two or three years of age.

206. *Infantile Fever Mixture.*

- R. Vini Antimonii Potassio-tartratis, ℥iss ;
 Vini Ipecacuanhæ, ℥ij ;
 Syrupi, ℥ss ;
 Tincturæ Camphoræ Compositæ, ℥iij ;
 Liquoris Ammoniæ Citratis, ℥ss ;
 Misturæ Camphoræ ad ℥ij. Misce. Sumat ℥j—ij secundâ vel tertiâ quâque horâ.
In infantile fever, severe catarrh, pneumonia, bronchitis, &c.

XI. DIURETICS.

207. *Broom, Squills, and Potash.*

- R. Potassæ Acetatis, ℥ss ;
 Aceti Scillæ, ℥ss ;
 Spiritus Ætheris Nitrici, ℥xx ;
 Tincturæ Digitalis, ℥v ;
 Decocti Scoparii Compositi, ℥iss. Misce, ter die sumendus.
Diuretic in ascites dependent upon disease of heart, liver, or peritoneum.

208. *Acetate of Potash and Digitalis.*

- R. Tincturæ Digitalis, ℥x ;
 Potassæ Acetatis, gr. x ;
 Syrupi Croci, ℥ss ;
 Infusi Digitalis, ℥ij ;
 Misturæ Camphoræ, ℥vj. Misce, fiat haustus ter die sumendus.

Valuable in cardiac dropsy.

209. *Broom and Potash.*

- R. Potassæ Bitartratis, ℥ij ;
 Decocti Scoparii Compositi, ℥vj. Misce. Sumat ℥j ter die.

Diuretic and aperient.

210. *Broom and Squills.*

- R. Tincturæ Scillæ, ℥ij ;
 Tincturæ Camphoræ Compositæ, ℥vj ;
 Liquoris Ammoniac Acetatis, ℥ij ;
 Decocti Scoparii Compositi, ℥v. Misce. Sumat ℥j ter die.

A diuretic and laxative ; useful in dropsies unaccompanied by acute inflammation, nor dependent upon disease of the kidneys.

211. *Digitalis and Nitre.*

- R. Potassæ Nitratis, gr. v ;
 Syrupi Aurantii, ℥ss ;
 Infusi Digitalis,
 Liquoris Ammoniac Acetatis, aa ℥iv. Misce, fiat haustus bis die sumendus.

DE. PARIIS.—*Diuretic and sedative.*

212. *Urea.*

- R. Ureæ, gr. x—xv ;
 Syrupi, ℥j ;
 Aquæ, ℥j. Misce, fiat haustus omnibus sextis horis sumendus.

*Recommended by the author as a diuretic in cases of cardiac dropsy.
 See Medical Times and Gazette, May, 1852.*

213. *Cantharides and Nitre.*

- R. Tincturæ Cantharidis, ℥xv ;
 Spiritus Ætheris Nitrici, ℥ss—j ;
 Syrupi Zingiberis, ℥j ;
 Misturæ Camphoræ, ℥x. Misce, fiat haustus ter die sumendus.

May be cautiously tried in some cases of suppression of urine.

214. *Taraxacum and Nitric Acid.*

℞. Acidi Nitrici Diluti, ℥j;
 Extracti Taraxaci, ℥ij;
 Decocti Taraxaci, ℥vj. Misce. Sumat ℥j ter die.
Laxative, diuretic, and alterative. Especially useful in disease of the liver unaccompanied by inflammation.

215. *Cream of Tartar and Taraxacum.*

℞. Potassæ Bitartratis, ℥ss;
 Decocti Taraxaci, ℥iss. Misce. Ter die sumendus.
In jaundice independent of hepatitis, or of obstruction of the duct of the gall-bladder.

216. *Conium, Digitalis, and Calomel.*

℞. Extracti Conii, ℥j;
 Pulveris Digitalis,
 Hydrargyri Chloridi, aa gr. v. Tere optime simul et divide in pilulas xv æquales, quorum sumat unam ter die.
As a sedative and diuretic in dropsy from heart disease, &c.

XII. EMETICS AND EXPECTORANTS.

217. *Tartar Emetic Mixture.*

℞. Antimonii Potassio-tartratis, gr. vj;
 Syrupi Rhæados, ℥j;
 Aquæ puræ, ℥iv. Misce. Capiat coehleare minimum subinde, ad nauseam vel vomitum promovendum.
Useful in cases where it is necessary to lower the vital powers.

218. *Warm Emetic.*

℞. Pulveris Ipecacuanhæ,
 Ammoniæ Sesquicarbonatis, aa ʒj;
 Spiritûs Lavandulæ Compositi, ℥xv;
 Aquæ, ℥iss. Misce, fiat haustus. Bibat æger postea infusi anthemidis tepidi octarium.
 DR. DRUIT.—*In the incipient stage of fever, erysipelas, &c.*

219. *Depressing Emetic.*

℞. Antimonii Potassio-tartratis, gr. j;
 Vini Ipecacuanhæ, ℥ij;
 Aquæ, ℥iss. Misce, fiat haustus vomitum excitare.

220. *Vel.*

- R. Antimonii Potassio-tartratis, gr. j ;
Pulveris Ipecacuanhæ, ℥j. Misce, fiat pulvis statim sumendus.

221. *Vel.*

- R. Vini Ipecacuanhæ, ℥j. Statim sumendus.

222. *Stimulant Emetic.*

- R. Pulveris Sinapis, ℥ss ;
Aquæ, ℥iij. Misce. Sumat dimidium statim et quod restat post horæ quadrantem si opus sit.

223. *Vel.*

- R. Cupri Sulphatis, gr. x ;
Aquæ, ℥iij. Misce, fiat haustus emeticus statim sumendus.

224. *Vel.*

- R. Zinci Sulphatis, ℥ss ;
Aquæ, ℥iij. Misce.

225. *An Emetic for Children.*

- R. Vini Ipecacuanhæ, ℥j. Statim sumendus.

226. *Expectorant and Sedative.*

- R. Tincturæ Scillæ, ℥xv ;
Tincturæ Camphoræ Compositæ, ℥ss ;
Syrupi Simplicis, ℥ss ;
Infusi Lini Compositi, ℥vij. Misce. Ter die sumendus.

227. *An Expectorant Mixture.*

- R. Syrupi Tolutani, ℥ss ;
Tincturæ Castorei, ℥j ;
Tincturæ Camphoræ Compositæ, ℥iij ;
Misturæ Ammoniaci,
Aquæ Cinnamomi, aa ℥iiss. Misce. Sumat ℥j ter die.
In the chronic bronchitis of elderly people.

228. *Stimulant and Expectorant.*

- R. Ammoniæ Sesquicarbonatis, ℥ss ;
Tincturæ Scillæ, ℥iss ;
Tincturæ Camphoræ Compositæ, ℥iiss ;
Syrupi Tolutani, ℥iv ;
Decocti Senegæ, ℥vij. Misce. Capiat ℥j quâta quâque horâ.
In the chronic bronchitis of old people.

229. *Stimulant Expectorant Mixture for Children.*

- R. Ammonia Sesquicarbonatis, gr. ij ;
 Tinctura Scilla, ℥v ;
 Decocti Senega, ℥ss ;
 Sacchari faecis, ℥ss. Misce, fiat haustus secundâ quâque
 horâ sumendus.

*An excellent stimulant expectorant for young children recovering
 from croup.*

230. *Expectorant and Tonic.*

- R. Tinctura Scilla, ℥j ;
 Acidi Nitrici Diluti, ℥ss ;
 Extracti Hyoscyami, ℥j ;
 Syrupi Papaveris, ℥ss ;
 Infusi Cinchona, ℥iv. Misce. Sumat ℥j bis terve die.

In chronic catarrh with restlessness.

231. *Ammonia and Senega.*

- R. Ammonia Sesquicarbonatis, ℥ij ;
 Tinctura Scilla, ℥iss ;
 Decocti Senega, ℥vii. Misce. Sumat ℥j omnibus sextis
 horis.

A good stimulant expectorant in some cases of bronchitis.

232. *Expectorant and Stimulant.*

- R. Tinctura Scilla, ℥iss ;
 Ammonia Sesquicarbonatis, ℥ss ;
 Syrupi Zingiberis, ℥iij ;
 Tinctura Camphora, Composita, ℥ij ;
 Infusi Serpentaria, ℥vss. Misce. Sumat ℥j ter indies.

In chronic catarrh.

233. *Saline Draught with Antimony.*

- R. Vini Antimonii Potassio-tartratis, ℥xv—xxv ;
 Spiritus Ætheris Nitrici, ℥xx ;
 Mistura Camphora, ℥j. Misce, fiat haustus quartâ quâque
 horâ sumendus.

*The large dose of antimonial wine is to be given only when it is
 desirable to produce nausea.*

234. *Conium, Nitric Ether, and Ipecacuanha.*

- R. Extracti Conii,
 Extracti Glycyrrhiza, aa ℥j ;
 Soda Bicarbonatis, gr. xvj ;
 Vini Ipecacuanha, ℥xl ;
 Spiritus Ætheris Nitrici, ℥j ;

Misturæ Camphoræ, ad ℥iv. Misce. Capiat ℥j omnibus sextis horis.

In bronchitis, when there is little or no fever, and an expectorant and sedative is indicated.

235. *Squills and Opium.*

R. Oxymellis Scillæ, ℥vj ;
Tincturæ Camphoræ Compositæ, ℥ij. Misce, ut fiat Linctus.
Capiat ℥j tussi urgente.

In the chronic bronchitis of old people.

XIII. GARGLES AND INHALATIONS.

236. *Acid Gargle.*

R. Acidi Hydrochlorici Diluti, ℥iij ;
Mellis, ℥j ;
Aquæ, ℥viss. Misce.

In tonsillitis, after the acute stage, &c.

237. *Borax Gargle.*

R. Sodæ Biboratis, ℥ss ;
Mellis, ℥j ;
Aquæ, ℥xss. Misce.

Useful in aphthæ and ulcerations about the fauces.

238. *Tannin Gargle.*

R. Tanninæ, ℥j ;
Spiritus Vini Gallici, ℥j ;
Misturæ Camphoræ, ℥v. Misce.

239. *Myrrh Gargle.*

R. Tincturæ Myrrhæ, ℥j ;
Aquæ, ℥vij. Misce, fiat gargarisma.

In mercurial salivation, ulceration about the mouth and fauces, &c.

240. *Vel.*

R. Tincturæ Myrrhæ, ℥iv ;
Aluminis, ℥ij ;
Aquæ, ℥viiss. Misce.

241. *A Brandy Gargle.*

May be made by adding one part of brandy to four of water.
Dr. WATSON recommends it in mercurial salivation.

242. *Disinfectant Gargle.*

R. Liguoris Sodæ Chlorinatæ, ℥j;
 Aquæ, ℥xj. Misce, fiat gargarisma.

In ulcerated sore throats, in profuse salivation, &c. It may also be used as a lotion to foul gangrenous ulcers.

243. *Iodine Inhalation.*

R. Tincturæ Iodini, ℥x—xv;
 Aquæ tepidæ, ℥iv. Misce, et statim inhaletur vapor.

Used in phthisis, with much caution.

244. *Turpentine Inhalation.*

R. Olei Terebinthinæ, ℥j;
 Aquæ tepidæ, ℥xj. Misce. Inhaletur vapor.

In chronic bronchitis with excessive secretion.

245. *Bichloride of Mercury Gargle.*

R. Hydrargyri Bichloridi, gr. iv;
 Acidi Nitrici Diluti, ℥j;
 Tincturæ Myrrhæ, ℥j;
 Aquæ, ℥xx. Misce, fiat gargarisma.

246. *Creasote Gargle.*

R. Creasoti, ℥xx;
 Mucilaginis Acaciæ, ℥ss;
 Aquæ, ad ℥viij. Misce.

247. *Capsicum and Alum.*

R. Aluminis Exsiccati, ℥ij;
 Tincturæ Capsici, ℥j—iv;
 Syrupi Croci, ℥iij;
 Aquæ Rosæ, ℥ij;
 Aquæ, ad ℥viij. Misce, fiat gargarisma.

In hoarseness, sore-throat, &c., with relaxation of the uvula.

248. *Borax Gargle.*

R. Sodæ Biboratis, ℥j;
 Aquæ, ℥viij. Misce.

XIV. LOTIONS, LINIMENTS, AND COLLYRIA.

249. *Prussic Acid Lotion.*

R. Acidi Hydrocyanici Diluti, ℥iv ;
 Plumbi Acetatis, gr. xv ;
 Alcoholis, ℥iv ;
 Aquæ, ℥viij. Misce, fiat lotio.

Recommended by DR. A. T. THOMSON in impetigo.

250. *Creasote Lotion.*

R. Creasoti, ℥j ;
 Glycerinæ, ℥iij ;
 Aquæ, ℥ix. Misce, fiat lotio.

Useful in pityriasis, &c.

251. *Cod-liver Oil Embrocation.*

R. Olei Morrhuæ, ℥iij ;
 Spiritus Ammoniac Aromatici, ℥j ;
 Pulveris Opii, gr. v ;
 Olei Lavandulæ, ℥ss. Misce.

DR. THEOPHILUS THOMSON.—*Very useful in phthisis and other cases where the use of cod-liver oil is indicated, but where the stomach will not bear it. Half of the above should be well rubbed over the chest night and morning.*

252. *Carron Oil.*

R. Olei Lini,
 Liquoris Calcis, aa ℥vj. Misce, fiat lotio.

For irritable ulcers, burns, &c.

253. *Soothing Lotion.*

R. Hydrargyri Bichloridi, gr. ij ;
 Acidi Hydrocyanici Diluti, ℥j ;
 Misturæ Amygdalæ, ℥vj. Misce, fiat lotio.

To check the itching in prurigo and other skin diseases.

254. *Sulphurous Acid Lotion.*

The solution of sulphurous acid used by Dr. Jenner in cases of tinea is made by passing a stream of the gas through water to saturation. Two ounces of this saturated solution is then added to six ounces of water to make the lotion. It may be obtained from most chemists.

255. *Cold Lotion.*

R. Liquoris Ammonia Acetatis, ℥ij ;
 Spiritus Vini Rectificati, ℥ij ;
 Aquæ Rosæ, ℥vij. Misce, fiat lotio.

A useful evaporating lotion in phrenitis, &c.

256. *An Absorbent Lotion.*

R. Zinci Oxydi, gr. xv ;
 Aquæ Rosæ, ℥j. Misce, fiat lotio.

Useful in impetigo, crusta lactea, &c.

257. *An Alkaline Lotion.*

R. Liquoris Potassæ, ℥j ;
 Acidi Hydrocyanici Diluti, ℥j ;
 Misturæ Amygdalæ, ℥viiss. Misce.

An excellent lotion in pityriasis, &c.

258. *Camphor Liniment and Opium.*

R. Linimenti Camphoræ Compositi, ℥liiss ;
 Tincturæ Opii, ℥ss. Misce.

To be rubbed over the scrobiculus cordis to check nausea and vomiting, pain, &c.

259. *Iodide of Potassium Liniment.*

R. Potassii Iodidi, ℥ss ;
 Aquæ, ℥ij. Misce, et adde Glycerinii ℥vj.

MR. SPENCER WELLS recommends a liniment of this nature as useful in dispersing the chalk-stones of gout.

260. *Rubefacient Liniment.*

R. Camphoræ, ℥j ;
 Pulveris Capsici, ℥ss ;
 Olei Macis, ℥xxx ;
 Olei Olivæ, ℥iiss ;
 Liquoris Ammonia, ℥vj. Misce, fiat linimentum.

Recommended by DR. COPLAND as a liniment to the chest, in complications of bronchitis with scarlatina or measles.

261. *A Stimulating Liniment.*

R. Linimenti Saponis,
 Linimenti Camphoræ Compositi, aa ℥ss ;
 Tincturæ Opii, ℥j. Misce, fiat linimentum fancis ex-
 ternis applicandum.

In tonsillitis, common sore throat, &c.

262. *Bichloride of Mercury.*

R. Hydrargyri Bichloridi, gr. j ;
Aquæ, ℥ij. Misce, fiat lotio.

Useful in tinea favosa, in children.

263. *Bichloride of Mercury.*

R. Hydrargyri Bichloridi, gr. vj ;
Aquæ Destillatæ, ℥vj. Misce, fiat linimentum. Signetur
—"Poison."

To be used every night, in cases of chloasma.

264. *Compound Mercurial Liniment.*

R. Unguenti Hydrargyri, ℥j ;
Camphoræ, 3ss ;
Liquoris Ammoniacæ, ℥j ;
Olei Olivæ, ℥ij. Misce.

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265. *Mercury and Iodine Liniment.*

R. Iodinii, ℥ij ;
Glycerinæ, ℥j ;
Unguenti Hydrargyri, ℥j ;
Olei Olivæ, ℥ij. Misce.

266. *Compound Lead Lotion.*

R. Liquoris Plumbi Diacetatis, ℥ij ;
Glycerinæ, ℥ij ;
Aquæ, ℥x. Misce, fiat lotio.

In pityriasis, &c.

267. *Sulphate of Atropia.*

R. Atropiæ Sulphatis, gr. j ;
Aquæ Destillatæ, ℥j. Misce.

Dilatation of the pupil is effected most speedily and is longest maintained by a solution of this kind. A full drop must be placed in the eye by means of a camel's hair pencil; the effect will be produced in from fifteen to twenty minutes, and will sometimes continue for seven or eight days.

268. *A Strengthening Eye-wash.*

R. Zinci Oxydi, ℥j ;
Aquæ Rosæ, ℥viij. Misce, fiat collyrium, nocte manequē utendum.

269. *Astringent Collyria.*

- R. Zinci Sulphatis, gr. ij—iv ;
 Vel, Aluminis, gr. ij—vj ;
 Vel, Cupri Sulphatis, gr. ss—iv ;
 Vel, Argenti Nitratis, gr. j—iv ;
 Vel, Liquoris Plumbi Diacetatis, ℥x ;
 Aquæ Destillatæ, ℥j. Misce.

270. *Iodide of Potash Collyrium.*

- R. Potassii Iodidi, gr. vj—viij ;
 Aquæ, ℥j. Misce, fiat Collyrium.

To remove stains of nitrate of silver from the conjunctiva.

XV. NARCOTICS AND SEDATIVES.

271. *Acetate of Morphia Draught.*

- R. Liquoris Morphine Acetatis, ℥xv—xxx ;
 Syrupi Limoni, ℥j ;
 Misturæ Camphoræ, ℥j. Misce, fiat haustus omni nocte
 sumendus.

272. *Chloroform and Opium.*

- R. Chloroformyli, ℥iv ;
 Tincturæ Opii, ℥xv—xxx ;
 Syrupi Rhoeados, ℥j ;
 Aquæ Destillatæ, ℥j. Misce.

In severe colic and other spasmodic diseases.

273. *Sedative and Stimulant.*

- R. Extracti Opii, gr. ss—j ;
 Misturæ Spiritûs Vini Gallici, ℥j. Misce, fiat haustus
 quartâ quâque horâ sumendus.

274. *Opiate Draught with Ether.*

- R. Tincturæ Opii, ℥xx ;
 Spiritûs Ætheris Compositi, ℥xv ;
 Aquæ Cinnamomi, ℥j. Misce, fiat haustus horâ somni sa-
 mendus.

275. *Chronic Catarrh Mixture.*

- R. Tincturæ Tolutanæ, ℥iv ;
 Syrupi Tolutani, ℥j ;
 Tincturæ Camphoræ Compositæ, ℥iij ;
 Misturæ Acaciæ ad ℥viij. Misce. Capiat ℥j ter die.

Useful in old people where the mucous secretion is excessive.

276. *Sedative in Irritable Cough.*

- R. Acidi Hydrocyanici Diluti, ℥_{xxv} ;
 Liquoris Morphie Acetatis, ℥_{ss} ;
 Syrupi Altheæ, ℥j ;
 Misturæ Acaciæ,
 Misturæ Camphoræ, aa ℥iiss. Misce. Capiat ℥j quartâ
 quâque horâ.

277. *Sedative in Asthma.*

- R. Spiritûs Ammonie Aromatici ℥_{xv} ;
 Tincturæ Lobeliæ,
 Spiritûs Ætheris Compositi, aa ℥_{xx} ;
 Misturæ Camphoræ, ℥xj. Misce, fiat haustus ter die sumendus.

278. *Sedative in Asthma.*

- R. Extracti Stramonii, gr. $\frac{1}{4}$ to gr. ss ;
 Extracti Hyoscyami, gr. iv. Misce, fiat pilula horâ somni sumenda.

279. *Sedative in Neuralgia.*

- R. Extracti Aconiti, gr. ss—j ;
 Pilulæ Hydrargyri Chloridi Compositæ, gr. iij. Misce, fiat pilula omni nocte sumenda.

280. *Sedative and Alterative.*

- R. Camphoræ, gr. v ;
 Pilulæ Hydrargyri, gr. iv ;
 Pulveris Opii, gr. j. Misce, fiant pilulæ duæ horâ somni sumendæ.

281. *A Safe Infantile Opiate.*

- R. Pulveris Ipecacuanhæ Compositi, gr. j ;
 Sacchari albi, ℥j. Misce bene et divide in pulveres iv.
 Sumat unum pro re natâ.

For infants from one to four weeks old.

282. *Conium and Dover's Powder.*

- R. Extracti Conii, ℥j ;
 Pulveris Ipecacuanhæ Compositi, ℥ss. Misce. Divide in pilulas x. Sumat unam tertiâ quâque horâ.
To relieve pain arising from cancer, &c.

283. *A Narcotic for Infants.*

- R. Tincturæ Opii, ℥j ;
 Mucilaginis Acaciæ,

Syrupi Simplicis, ℥℥ ℥ij ;
Misturæ Camphoræ, ℥iv. Misce. Capiat ℥j bis terve indies.

284. *Sedative in Cardiac Diseases.*

R. Tincturæ Digitalis, ℥x—xv ;
Acidi Hydrocyanici Diluti, ℥iij ;
Tincturæ Opii, ℥v ;
Misturæ Camphoræ, ℥j. Misce, fiat haustus bis terve die sumendus.

285. *Dr. Guy's Cough Mixture.*

R. Acidi Sulphurici Diluti, ℥xx ;
Tincturæ digitalis, ℥x ;
Tincturæ Opii, ℥v ;
Infusi Quassie, ℥j. Misce, fiat haustus ter die sumendus.

286. *Conium and Hyoscyamus.*

R. Extracti Hyoscyami, gr. iij ;
Extracti Conii, gr. ij. Misce, fiat pilula omni nocte sumenda.

287. *Indian Hemp.*

R. Extracti Cannabis Indicæ, gr. v. Vespere ante somnum sumenda.

288. *Cough Mixture.*

R. Vini Ipecacuanhæ, ℥ij ;
Syrupi Tolutani, ℥vj ;
Tincturæ Opii, ℥ss ;
Misturæ Acaciæ, ℥j. Misce. Sumat ℥j omni horâ.

289. *Sedative Enema.*

R. Tincturæ Opii, ℥xl—℥j ;
Decocti Amyli, ℥ij. Misce.
In tenesmus, &c.

290. *Opiate Suppository.*

R. Pulveris Opii, gr. ij—iv ;
Saponis, gr. iij. Misce, fiat suppositorium.
To procure sleep and allay pain, when opium cannot be taken by the mouth.

291. *Henbane, Camphor, &c.*

R. Camphoræ, gr. iij ;
Tincturæ Hyoscyami,
Tincturæ Lupuli, ℥℥ ℥j ;
Misturæ Acaciæ ad ℥j. Misce, fiat haustus, horâ somni sumendus.

292. *Opiate Pill.*

R. Pulveris Opii, gr. ij vel iij;
 Confectionis Rosæ, q. s. ut fiat pilula horâ somni sumenda.
In delirium tremens, great restlessness, &c.

293. *Morphia Pill.*

R. Morphisæ Acetatis, gr. $\frac{1}{4}$ to gr. j;
 Extracti Hyoscyami, gr. iij. Misce, fiat pilula omni nocte
 sumenda.
In delirium tremens, mania, and other affections.

294. *Morphia Linctus.*

R. Syrupi Rhoeados,
 Aceti Scillæ, aa ʒss;
 Morphisæ Acetatis, gr. ss. Misce. Sumat ʒj tussi urgente.

295. *Common Linctus.*

R. Tincturæ Camphoræ Compositæ, ʒij;
 Oxy mellis Scillæ, ʒvj. Misce. Sumat ʒj tussi urgente.

XVI. OINTMENTS.

296. *Sedative Ointment.*

R. Unguenti Conii,
 Unguenti Opii, aa ʒss. Misce.

297. *Vel.*

R. Acidi Hydrocyanici Diluti, ʒij;
 Unguenti Cetacei, ʒj. Misce.
In cutaneous diseases attended with pruritus, or pain.

298. *Vel.*

R. Aconitinæ, gr. j;
 Adipis, ʒj. Misce.
In neuralgia, tic douloureux, &c. Must be used cautiously.

299. *Mercury and Opium.*

R. Unguenti Hydrargyri, gr. x;
 Pulveris Opii, gr. ij. Misce, fiat unguentum.
*Recommended by DR. WATSON in cases of severe nocturnal pain
 around the orbit. It is to be rubbed into the temple just before the
 pain may be expected.*

300. *As a Counter-irritant.*

R. Olei Crotonis, m℥;
 Adipis, ℥ss. Misce, fiat unguentum. Infricetur ℥j ad nucis, bis terve in die, donec appareat eruptio cutanea.
A useful counter-irritant in internal inflammations after the acute stage.

301. *Veratria Ointment.*

R. Veratriæ, gr. iv;
 In Alcoholi, m℥j solutæ,
 Adipis, ℥ss. Misce optime, fiat unguentum.
In chronic rheumatism, neuralgia, gout, &c., a piece the size of a small nut may be rubbed in night and morning. Its strength may be gradually increased to double the above.

302. *Diluted Citrine Ointment.*

R. Unguenti Hydrargyri Nitratis, ℥ij;
 Unguenti Cetacei, ℥vj. Misce. Hujus unguenti, paululum, ope penicilli camelini, oculo affecto applicetur nocte manequæ.
To prevent the eyelids adhering in ophthalmia.

303. *Cod-liver Oil Ointment.*

R. Olei Morrhuæ, ℥ss;
 Liquoris Potassæ, ℥ss;
 Adipis, q. s. Misce, fiat unguentum sæpe utendum.
In strumous sores and obstinate cutaneous diseases.

304. *Peruvian Balsam Ointment.*

R. Balsami Peruviani, ℥j;
 Unguenti Cetacei, ℥j. Misce.

305. *Compound Belladonna Ointment.*

R. Extracti Belladonnæ, ℥iij;
 Camphoræ, ℥ij;
 Spiritus Vini Rectificati, q. s.;
 Extracti Conii, ℥ss;
 Adipis recentis, ℥vij. Misce.

306. *Compound Iodine Ointment.*

R. Unguenti Iodini Compositi, ℥vj;
 Cerati Cetacei, ℥ij. Misce.
Useful when rubbed upon the throat in bronchocele, as well as when applied to scrofulous glands, unsuppurating buboes, and the tumid bellies of children with mesenteric disease.

307. *Ocalmel Ointment.*

R. Hydrargyri Chloridi, ʒj;
 Adipis, ʒj. Misco, fiat unguentum.
Very useful in herpes psoriasis, and lepra.

308. *Iodide of Sulphur Ointment.*

R. Sulphuris Iodidi, ʒj;
 Adipis, ʒj. Misco, fiat unguentum.
Useful in acne, applied twice daily.

309. *Guthrie's Ointment.*

R. Argenti Nitratæ, gr. x;
 Adipis, ʒj. Misco, fiat unguentum.
In purulent and gonorrhæal ophthalmia.

310. *Aconitine Ointment.*

R. Aconitinæ, gr. ij;
 Spiritus Vini Rectificati, guttæ vj. Misco bene et adde
 Adipis, ʒj.
 DR. TURNBULL.—*A small portion to be painted over the painful nerve.*
It must not be used where there is the slightest abrasion of the skin.
For severe neuralgia.

311. *Sulphur and Pitch Ointment.*

R. Sulphuris Sublimati,
 Picis Liquidæ,
 Adipis Purificati, aa ʒij;
 Cretæ Preparatæ, ʒj;
 Ammonie Hydrosulphureti, ʒss. Misco, ut fiat unguentum.
 WILKINSON.—*For ringworm.*

XVII. REFRIGERANTS AND SALINES.

312. *Effervescing Draught.*

R. Sodæ Sesquicarbonatæ, ʒj;
 Syrupi, ʒj;
 Tincturæ Hyoscyami, ℥xv;
 Aquæ, ʒj. Misco, et fiat haustus effervescentes cum Succo
 Limonis ʒss. Ter quaterve indices sumendus.

313. *Saline Mixture.*

R. Spiritus Ætheris Nitrici, ʒiv;
 Liqueoris Ammonie Citratæ, ʒiij;
 Tincturæ Opii ʒss;
 Mixture Camphoræ ad ʒviij. Misco. Sumat ʒj quartâ
 quâque horâ.

314. *Saline Draught.*

- R. Oxymellis Scillæ, 3ss;
 Spiritus Ætheris, Nitrici,
 Tincturæ Camphoræ Compositæ, aa ʒj;
 Misturæ Amygdalæ, ʒj. Misco, fiat haustus omnibus sextis
 horis sumendus.

DR. WATSON.—*In influenza.*

315. *A Narcotic Saline Draught.*

- R. Spiritus Ætheris Nitrici, 3ss;
 Tincturæ Opii, ℥xv;
 Liqueoris Ammoniacæ Acetatis,
 Aquæ Puræ, aa ʒss. Misco, fiat haustus, quartâ quâque
 horâ capiendus. Mitte haustus quatuor.

Useful in fever, or common catarrh, with restlessness.

316. *A simple Saline.*

- R. Potassæ Nitratis, gr. x;
 Liqueoris Ammoniacæ Citratis, ʒij;
 Misturæ Camphoræ, ʒvj. Misco, fiat haustus, quartâ quâ-
 que horâ sumendus.

317. *Dr. Stevens's Saline Mixture.*

- R. Sodii Chloridi, ʒj;
 Potassæ Chloratis, gr. viij;
 Sodæ Carbonatis, 3ss;
 Aquæ, ʒiss. Misco. Omni semihora sumendus.

In cholera.

318. *Bicarbonate of Potass Drink.*

- R. Potassæ Bicarbonatis, ʒij—iv;
 Aquæ, Oiss—ij. Misco, pro potu omni die sumendus.

Very useful in the uric-acid diathesis. A drink called "constitution-water" owes its efficacy to the bicarbonate of potash it contains.

319. *Refreshing Drink.*

- R. Potassæ Bitartratis, ʒj;
 Olei Limonis, guttas xv;
 Sacchari Purificati, ʒij;
 Aquæ Bullientis, Oj. Misco, pro potu communi.

An excellent drink when the thirst is intense.

320. *Refreshing Acid Drink.*

- R. Acidi Hydrochlorici Diluti, ʒij;
 Mellis, ʒj;
 Decocti Hordei, Oj. Misco. Sumatur quotidie quasi potus
 familiaris.

DR. PARIS.

321. *Vel.*

R. Acidi Sulphurici Diluti, ℥ss;
Decocti Hordei, Oj. Misce, pro potu.

322. *Phosphoric Acid Drink.*

R. Acidi Phosphorici Diluti, ℥ij;
Decocti Hordei, Oj. Misce, pro potu.

Recommended by DR. PARIS as very efficacious in assuaging the thirst of diabetes, &c.

323. *Fever Drink.*

R. Potassæ Chloratis, ℥j;
Aque, Oj. Misce fiat potus.

Recommended by DR. WATSON, as a daily drink in cases of fever.

324. *Colchicum and Magnesia.*

R. Vini Colchici, ℥iss;
Magnesiæ Carbonatis, ℥ij;
Misturæ Camphoræ, ℥vj. Misce. Sumat ℥j nocte maneque.

325. *Colchicum and Chlorate of Potash.*

R. Vini Colchici, ℥iss;
Potassæ Chloratis, ℥ij—℥j;
Liquoris Ammoniac Citratis,
Misturæ Camphoræ, aa ℥iij. Misce. Sumat ℥j ter die

In gout.

326. *Borax Mixture.*

R. Sodæ Biboratis, ℥j;
Spiritus Ætheris Nitrici, ℥ij;
Syrupi Papaveris,
Syrupi Aurantii, aa ℥iij;
Infusi Lini Compositi ad ℥vj. Misce. Sumat ℥j quartâ quâque horâ.

327. *Nitrate of Potash.*

R. Potassæ Nitratis, ℥j. Fiat pulvis, e cyatho aque perfrigidæ prompte hauriendus.

XVIII. STIMULANTS AND TONICS.

328. *Stimulant Draught.*

R. Spiritus Ammoniac Aromatici, ℥xx;
Spiritus Myristicæ, ℥ss;
Tincturæ Cardamomi Compositæ, ℥j;
Infusi Caryophylli, ℥x. Misce, fiat haustus ter die sumendus.

In debility with nausea and flatulence.

329. *Stimulant Effervescent Draught.*

- R. Ammonia Sesquicarbonatis, gr. xvij ;
 Acidi Hydrocyanici Diluti, ℥ij ;
 Tinctura Cardamomi Composita, ℥ss ;
 Liqueoris Opii Sedativi, ℥v ;
 Aqua, ℥ss. Misce, et fiat haustus effervescent cum Acidi
 Citrici gr. xv. Ter die sumendus.

In irritable stomach, with nausea or vomiting, and depression.

330. *A Stimulant Mixture.*

- R. Spiritus Ammonia Aromatici, ℥j ;
 Tinctura Castorei, ℥ij ;
 Spiritus Lavandula, ℥ij ;
 Aqua Pimenta, ℥j. Fiat mistura, cujus drachmae dua,
 pro re nata, ingerantur, contra languorem et deliquium.

DR. PEREIRA.—*In some cases of hysteria.*

331. *Bark and Ammonia.*

- R. Ammonia Sesquicarbonatis, ℥ss—℥ij ;
 Syrupi Zingiberis, ℥ss ;
 Infusi Cinchona, ℥viiss. Misce. Dosis, pars sexta ter
 quaterve in die.

332. *Acid Draught, with Bark.*

- R. Acidi Sulphurici Diluti, ℥x ;
 Syrupi Aurantii, ℥j ;
 Infusi Cinchona, ℥x ;
 Tinctura Cinchona Composita, ℥j. Misce, fiat haustus ter
 die sumendus, ante cibum.

333. *Quinine and Ammonia.*

- R. Quina Disulphatis, gr. ij ;
 Spiritus Aetheris Compositi,
 Spiritus Ammonia Aromatici, aa ℥ss ;
 Tinctura Opii, ℥v—x ;
 Infusi Cinchona, ℥xj. Misce, fiat haustus ter quaterve in
 die sumendus.

In cases of great exhaustion, with low muttering delirium, restlessness, &c.

334. *Quinine and Acid Draught.*

- R. Quina Disulphatis, gr. ij ;
 Acidi Sulphurici Diluti, ℥v ;
 Tinctura Aurantii,
 Syrupi ejusdem, aa ℥j ;
 Infusi Gentiana Compositi, ℥j. Misce, fiat haustus ter die
 sumendus.

335. *Quinine and Acid.*

R. Tincturæ Quinæ Compositæ, ℥j;
 Acidi Sulphurici Diluti, ℥j;
 Infusi Aurantii Compositi, ℥vij. Misce. Capiat ℥j ter die.
Amongst other purposes, this mixture may be used to check the night-sweats in phthisis.

336. *Quinine and Iron.*

R. Quinæ Disulphatis,
 Ferri Sulphatis, aa gr. xij;
 Acidi Sulphurici Diluti, ℥j;
 Tincturæ Hyoscyami, ℥iiss;
 Infusi Quassia, ℥vj. Misce. Sumat ℥j ter die.

337. *A Substitute for Quinine.*

R. Beeberinæ Sulphatis, gr. xvj;
 Acidi Sulphurici Diluti, ℥x;
 Syrupi Florum Aurantii, ℥ss;
 Aquæ Destillatæ, ℥iilss. Misce. Capiat cochlearia ampla
 duo sextis horis.
In neuralgic affections assuming a periodic character.

338. *Tonic Acid Draught.*

R. Tincturæ Calumbæ, ℥j;
 Acidi Sulphurici Diluti, ℥xv;
 Syrupi Aurantii, ℥ss;
 Infusi Calumbæ, ℥x. Misce, fiat haustus ter die sumendus.

339. *Iodide of Iron and Cod-liver Oil.*

R. Syrupi Ferri Iodidi, ℥iij;
 Mucilaginis Acaciæ, ℥j;
 Olei Morrhuæ, ℥ivss. Misce. Sumat ℥ss bis terve indies.
In some forms of phthisis, scrofula, &c.

340. *Chiretta and Acid.*

R. Acidi Hydrochlorici, ℥x;
 Acidi Hydrocyanici Diluti, ℥iij;
 Infusi Chirettæ, ℥j. Misce, fiat haustus ter die sumendus.
As a stomachic, especially in the dyspepsia of gouty subjects.

341. *Quinine Mixture for Children.*

R. Quinæ Disulphatis, gr. j;
 Acidi Sulphurici Diluti, ℥j;
 Syrupi Aurantii, ℥ss;
 Aquæ, ℥iv. Misce. Ter die sumendus.
Very useful in strumous ophthalmia, and all cases of debility.

342. *Stimulant Mixture for Children.*

R. Spiritus Ammonia Aromatici, ℥j ;
 Spiritus Ætheris Compositi, ℥xl ;
 Aquæ ad ℥ij. Misce. Capiat ℥j vel ℥ij secundâ quâque
 horâ.

Useful in infantile diseases attended with great exhaustion.

343. *An Acid Stimulant.*

R. Acidi Hydrochlorici Diluti, ℥iv ;
 Spiritus Ætheris Compositi, ℥vij ;
 Misturæ Camphoræ, ℥iij. Misce, fiat haustus omnibus
 sextis horis sumendus.

*Recommended by DR. STEIGLITZ, of St. Petersburg, as a stimulant for
 a child, aged about five, suffering from fever.*

344. *Griffith's Mixture with Aloes.*

R. Misturæ Ferri Compositæ,
 Decocti Aloes Compositi, aa ℥ss. Misce, fiat haustus ter
 die sumendus.

Very useful in anæmia, and general debility.

345. *Quinine and Steel.*

R. Ferri et Quinæ Citratis, gr. v ;
 Infusi Calumbæ, ℥j. Misce, fiat haustus ter die sumendus.

*An excellent tonic where there is debility, with a weak irritable
 stomach.*

346. *Quinine and Iodide of Iron.*

R. Syrupi Quinæ et Ferri Iodidi, ℥ss ;
 Infusi Calumbæ, ℥j. Misce, fiat haustus ter die sumendus.

This triple syrup is especially useful in strumous affections.

347. *Nitro-muriatic Acid Drops.*

R. Acidi Nitrici, ℥j ;
 Acidi Hydrochlorici, ℥ss ;
 Tincturæ Gentianæ Compositæ, ℥xiv. Misce, guttæ xxx
 ter quaterve indies.

In oxaluria, dyspepsia, &c.

348. *Nitro-muriatic Acid Mixture.*

R. Acidi Nitrici Diluti, ℥j ;
 Acidi Hydrochlorici Diluti, ℥ss ;
 Infusi Gentianæ Compositi, ℥vj. Misce. Sumat ℥j ter die.

In dyspepsia, with sluggish action of the liver.

349. *Steel Electuary.*

R. Ferri Sesquioxidi,
Theriaca, aa ℥ij. Misce. Capiat ℥j ter die.
In chorea, &c.

350. *Steel and Acid Mixture.*

R. Tincturæ Ferri Sesquichloridi, ℥ij;
Acidi Hydrochlorici Diluti, ℥ij;
Tincturæ Hyoscyami, ℥iiss;
Misturæ Camphoræ, ℥xij. Misce. Sumat ℥j ter die.

351. *Bark and Liquor Potassæ.*

R. Liquoris Potassæ, ℥ss;
Tincturæ Cinchonæ Compositæ, ℥j;
Decocti Cinchonæ, ℥x. Misce, fiat haustus bis die sumendus.
In debility, attended with the lithic-acid diathesis.

352. *Salicin and Sarsaparilla.*

R. Salicin, ℥j;
Syrupi Sarsæ, ℥j;
Infusi Gentianæ Compositi, ℥viij. Misce. Capiat cochlearia ampla duo ter in die.
During convalescence from acute diseases of the digestive organs.

353. *Ammonia and Rhubarb.*

R. Spiritus Ammonia Aromatici, mxxv;
Tincturæ Rhei Compositæ, ℥ss;
Infusi Rhei, ℥j. Misce, fiat haustus ter die sumendus.
In dyspepsia, with constipation.

354. *Steel and Ammonia.*

R. Ammonia Sesquicarbonatis, ℥j;
Ferri Ammonio-citratis, ℥j—ij;
Tincturæ Hyoscyami, ℥ij;
Infusi Quassia, ℥xij. Misce. Sumat ℥j ter die.

355. *Phosphate of Iron.*

R. Ferri Phosphatis, gr. xxx;
Pulveris Myrrhæ, gr. xij;
Sacchari albi, gr. vj. Misce. Divide in pulveres sex,
quorum sumatur unus nocte manequæ.
In rickets and other strumous diseases of children.

356. *The Acetate of Strychnia.*

R. Strychniæ Acetatis, gr. j ;

Acidi Acetosi, ℥xx ;

Alcoholis, ℥ij ;

Aquæ Destillatæ, ℥vj. Misce. Sumat guttæ x ter die.

Recommended by Dr. MARSHALL HALL as a tonic in cases of nervous exhaustion, &c. Ten drops contain about the fifteenth part of a grain.

357. *Strychnia Pills.*

R. Strychniæ, gr. j ;

Confectionis Rosæ Gallicæ, ℥j. Misce, secundum artem, et divide in pilulas xij. Sumat unam nocte maneque.

In partial paralysis, amaurosis, &c., when the acute symptoms have subsided.

358. *Cantharides and Steel.*

R. Tincturæ Cantharidis, ℥xv ;

Misturæ Ferri Compositæ, ℥j. Misce. Ter die sumendus.

In debility of the generative organs.

359. *Vel.*

R. Tincturæ Cantharidis,

Tincturæ Ferri Sesquichloridi, ℥jiss ;

Tincturæ Capsici, ℥j ;

Syrupi Croci, ℥ij ;

Aquæ ad ℥vj. Misce. Sumat ℥j ter die.

360. *Ammonia and Gentian.*

R. Spiritus Ammoniæ Aromatici, ℥ij ;

Tincturæ Hyoscyami, ℥iss ;

Misturæ Gentianæ Compositæ, ℥vj. Misce. Capiat ℥j ter die.

In phosphuria, with constipation.

361. *Phosphorus Pills.*

R. Mice Panis, ℥j ;

Aquæ Destillatæ, quantum satis sit ut fiat massa idonea crassitudinis ; dein adde Phosphori granum unum. Misceantur bene, et divide in pilulas viginti. Sumat una ter quaterve indies.

In extreme debility, after cholera, &c.

362. *Valerianate of Zinc.*

R. Zinci Valerianatis, gr. j ;

Confectionis Rosæ, q. s. ut fiat pilula ter die sumendus.

In epilepsy, neuralgia, hysteria, &c. The valerianate of quinine and of steel may be employed in the same manner.

363. *Iodide of Iron.*

- R. Ferri Iodidi, gr. ij;
 Extracti Gentianæ, gr. iij. Misce, fiat pilula ter die sumenda.

364. *Quinine and Iron.*

- R. Quinæ Disulphatis,
 Ferri Sulphatis, aa gr. iss;
 Extracti Hyoscyami, gr. ij. Misce, fiat pilula ter die sumenda.

365. *Sulphate of Zinc.*

- R. Zinci Sulphatis, gr. j;
 Extracti Gentianæ, gr. iv. Misce, fiat pilula ter die sumenda.

In epilepsy and cases requiring a gentle tonic.

366. *Nux Vomica and Nitro-muriatic Acid.*

- R. Tincturæ Nucis Vomice (Phar. Dub.), ʒj;
 Acidi Nitrici Diluti,
 Acidi Hydrochlorici Diluti, aa ʒj;
 Tincturæ Zingiberis, ʒij;
 Syrupi, ʒiij;
 Aquæ, ʒvss. Misce. Dosis, pars sexta ter die.

DR. DREWITT.—*In any form of functional paralysis after all known causes are remedied. In obstinate debility, diabetes insipidus, alkaline urine, &c.*

367. *Citrate of Potash and Steel.*

- R. Potassæ Bicarbonatis, ʒij;
 Spiritus Ammonię Aromatici, ʒiss;
 Ferri Ammonio-citratis, ʒj;
 Infusi Calumbæ, ʒvj. Misce. Sumat ʒj bis terve die cum Succo Limonis, ʒss.

In debility, with irritability of the stomach.

368. *Sulphate of Zinc and Conium.*

- R. Zinci Sulphatis, gr. j;
 Pilulæ Conii Compositæ, gr. iv. Misce, fiat pilula bis terve die sumenda.

In the chronic bronchitis of old people as a tonic and sedative; opium being inadmissible.

369. *Steel and Aloes, &c.*

- R. Ferri Carbonatis cum Saccharo, gr. v;
 Aquæ Anethi, ʒj. Misce, fiat haustus bis die sumendus.

- R. Extracti Rhei, gr. xij ;
 Sodæ Phosphatis, ʒj ;
 Decocti Aloes Compositi, ʒss ;
 Aquæ Pimentæ, ʒj. Misco, fiat haustus alternis noctibus
 sumendus.

DR. GAIRDNER.—*In gout, with debility.*

370. Quinine, Steel, and Epsom Salts.

- R. Quinæ Disulphatis, gr. j ;
 Ferri Sulphatis, gr. ij ;
 Acidi Sulphurici Diluti, ℥x ;
 Tincturæ Hyoscyami, ℥xx ;
 Tincturæ Zingiberis, ʒss ;
 Magnesiæ Sulphatis, ʒj—ij ;
 Infusi Quassiæ ad ʒij. Misco, fiat haustus bis die sumen-
 dus.

A valuable tonic-aperient.

371. Steel and Epsom Salts.

- R. Tincturæ Ferri Ammonio-chloridi, ʒss ;
 Spiritûs Ammoniæ Aromatici, ℥xx ;
 Magnesîæ Sulphatis, ʒss ;
 Infusi Quassîæ, ʒiss. Misco, fiat haustus ter die sumen-
 dus.

In anæmia.

A CLASSIFIED LIST OF THE PRINCIPAL MINERAL WATERS.

I. SALINE APERIENT.

1. Carlsbad, in Bohemia (165° Fahr.).
2. Kissengen, in Bavaria (cold).
3. Marienbad, in Bohemia (cold).
4. Franzensbad, in Bohemia (cold).
5. Cheltenham, in Gloucestershire (cold).
6. Leamington, in Warwickshire (cold).
7. Scarborough, in Yorkshire (cold).

II. HOT SALINE.

1. Wiesbaden, in the Duchy of Nassau (160°).
2. Baden-baden, in the Grand Duchy of Baden (153°).

III. HOT SULPHUREOUS.

1. Aix-la-Chapelle, in Prussia (130°).
2. Barèges, in the Pyrenees (130°).
3. Bagnères de Luchon, in the Pyrenees (130°).

IV. HOT ALKALINE.

1. Vichy, in Central France (108°).
2. Mont Dore, in Central France.
3. Ems, in the Duchy of Nassau (83°—115°).
4. Toeplitz, in Bohemia (114°—122°).
5. Schlangenbad, in the Duchy of Nassau (86°).
6. Wildbad, in the kingdom of Wurtemberg (88°—99°).

V. SIMPLE UNMINERALIZED, HOT.

1. Pfeffers, in Switzerland (100°).
2. Gastein, in the Tyrol (118°).
3. Buxton, in Derbyshire (82°).
4. Bristol, in Gloucestershire (74°).
5. Matlock, in Derbyshire (66°).

VI. SIMPLE MINERALIZED, HOT.

1. Bath, in Somersetshire (112°—116°).
2. Pyrenees (80°—122°).

VII. CHALYBEATE.

1. Spa, in Belgium (cold).
2. Schwalbach, in the Duchy of Nassau (cold).
3. Pyrmont, in Westphalia (cold).
4. Marienbad, in Bohemia (cold).
5. Bruckenaau and Bocklet, in Bavaria (cold).
6. Tunbridge, in Kent (cold).

VIII. CHALYBEATE AND SULPHUREOUS.

1. Harrogate, in Yorkshire (cold).

IX. IODURETTED AND BROMINATED.

1. Creuznach, in Rhenish Prussia (also saline, 55°)
2. Ischl, in the Tyrol (also powerfully saline).
3. Woodhall, in Lincolnshire (55°).

PROPORTIONS OF ACTIVE INGREDIENTS IN SOME
IMPORTANT PREPARATIONS.

MERCURIAL PREPARATIONS.

	Of Mercury.
Hydrargyrum cum Cretâ	contains gr. iij in gr. viij.
Pilula Hydrargyri	" gr. j in gr. iij.
Linimentum Hydrargyri	" gr. x in 3j.
Ceratum Hydrargyri Compositum	" 3iij in 3viij.
Unguentum Hydrargyri	" 3i in 3ii.

380 **INGREDIENTS IN IMPORTANT PREPARATIONS.**

Of Calomel.

Pilula Hydrargyri Chloridi Composita contains gr. j in gr. v.

Of Bichloride of Mercury.

Liquor Hydrargyri Bichloridi . . . contains gr. $\frac{1}{2}$ in $\mathfrak{z}\text{j}$.

PREPARATIONS OF OPIUM.

Of Opium.

<i>Confectio Opii</i>	contains	gr. j in gr. xxxvj.
<i>Enema Opii</i>	"	gr. iss in $\mathfrak{z}\text{iv}$.
<i>Linimentum Opii</i>	"	gr. xij in $\mathfrak{z}\text{ij}$.
<i>Emplastrum Opii</i>	"	$\mathfrak{z}\text{j}$ in $\mathfrak{z}\text{xiss}$.
<i>Pilula Saponis Composita</i>	"	gr. j in gr. v.
<i>Pilula Styracis Composita</i>	"	gr. j in gr. v.
<i>Pilula Ipecacuanhæ cum Scilla</i>	"	gr. $\frac{1}{2}$ in gr. x.
<i>Pulvis Cretæ Compositus cum Opio</i>	"	gr. j in $\mathfrak{z}\text{ij}$.
<i>Pulvis Ipecacuanhæ Compositus</i>	"	gr. j in gr. x.
<i>Pulvis Kino Compositus</i>	"	gr. j in $\mathfrak{z}\text{j}$.
<i>Tinctura Camphoræ Composita</i>	"	gr. ij in $\mathfrak{z}\text{j}$.
<i>Tinctura Opii</i>	"	gr. j in $\mathfrak{m}\text{xix}$.
<i>Unguentum Opii</i>	"	$\mathfrak{z}\text{j}$ in $\mathfrak{z}\text{j}$.
<i>Vinum Opii</i>	"	gr. j in $\mathfrak{m}\text{xix}$.
Godfrey's Cordial	"	gr. j in $\mathfrak{z}\text{ij}$.
Dalby's Carminative	"	gr. $\frac{1}{2}$ in $\mathfrak{z}\text{ij}$.

Of Morphia.

<i>Liquor Morphiæ Acetatis</i>	"	gr. j in $\mathfrak{z}\text{j}$.
<i>Liquor Morphiæ Hydrochloratis</i>	"	gr. j in $\mathfrak{z}\text{j}$.

PREPARATIONS OF ANTIMONY.

Of Tartar Emetic.

<i>Vinum Antimonii Potassio-tartratis</i>	contains	gr. $\frac{1}{2}$ in $\mathfrak{z}\text{j}$
<i>Unguentum Antimonii Potassio-tartratis</i>	"	$\mathfrak{z}\text{j}$ in $\mathfrak{z}\text{v}$.

PREPARATIONS OF IODINE.

Of Iodine.

<i>Tinctura Iodini (Phar. Dub.)</i>	contains	gr. v in $\mathfrak{z}\text{j}$.
<i>Tinctura Iodini Composita</i>	"	gr. iss in $\mathfrak{z}\text{j}$.
<i>Liquor Potassii Iodidi Compositus</i>	"	gr. j in $\mathfrak{z}\text{iv}$.
<i>Unguentum Iodini Compositum</i>	"	gr. v in $\mathfrak{z}\text{ij}$.

Of Iodide of Iron.

Syrupus Ferri Iodidi contains gr. j in $\mathfrak{m}\text{xij}$.

The *Liquor Hydriodatis Arsenici et Hydrargyri*, contains in each $\mathfrak{z}\text{j}$ gr. $\frac{1}{2}$ of Arsenious Acid, gr. $\frac{1}{2}$ of Oxide of Mercury, and gr. $\frac{1}{2}$ of Iodine in the form of Hydriodic Acid.

INGREDIENTS IN IMPORTANT PREPARATIONS. 381

PREPARATIONS OF ARSENIC.

	Of Arsenious Acid.
Liquor Potassæ Arsenitis	contains gr. iv in ℥j.
Liquor Arsenici Chloridi	“ gr. iss in ℥j.

PREPARATIONS OF CANTHARIDES.

	Of Cantharides.
Acetum Cantharidis	contains ℥iv in ℥v.
Emplastrum Cantharidis	“ ℥j in ℥ij.
Ceratum Cantharidis	“ ℥j in ℥viij.
Tinctura Cantharidis	“ ℥j in ℥x.

DILUTE ACIDS.

	Of Strong Acid.
Acidum Aceticum Dilutum	contains ℥iss in ℥xij.
Acidum Hydrochloricum Dilutum	“ ℥j in ℥iv.
Acidum Nitricum Dilutum	“ ℥iss in ℥x.
Acidum Sulphuricum Dilutum	“ ℥j in ℥xj.
Acidum Hydrocyanicum Dilutum (Phar. Lond.)	“ 2 per cent.
Scheele's Hydrocyanic Acid	“ 4 or 5 percent.

A TABLE SHOWING THE QUANTITY OF ACID REQUIRED TO DECOMPOSE ℥j OF CERTAIN ALKALINE SALTS.

	Lemon juice.	Citric Acid.
Bicarbonate of Potash ℥j	requires ℥iiss	. . gr. xiv.
Bicarbonate of Soda ℥j	“ ℥iv	. . gr. xvj.
Sesquicarbonate of Ammonia ℥j	“ ℥vss	. . gr. xxij.

FREEZING MIXTURES.

The best and cheapest freezing mixture is made with ice and common salt in equal parts. Any of the following, however, will prove useful:—

Mixtures.	Parts.	Therm. Sinks.
Sal Ammoniac	5	} From 50° to 10°.
Nitre	5	
Water	16	
Nitrate of Ammonia	1	} From 50° to 4°.
Water	1	
Snow	1	} From 32° to 0°.
Common Salt	1	
Snow or Ice	12	} From 18° to —25°.
Common Salt	5	
Nitrate of Ammonia	5	

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- Hepatitis.** See Inflammation of Liver, 235.
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- Hydatid Tumors of Liver.** *Symptoms*, sense of weight—enlargement of liver—ascites, &c.; *treatment*, iodide of potassium—common salt, 241.
- Hydrocephalus, Acute.** Consists of inflammation of the brain in strumous children; *symptoms*, cerebral congestion—general fever—nausea and vomiting—restlessness—child wishes to be quiet in bed—complains of its head—pulse falls from 120 to 80—stupor—convulsions—paralysis—coma; *treatment*, great caution in bleeding—purgatives—mercury—cold to the head, &c., 98.
- Hydrocephalus Chronic.** Consists of dropsy of the brain; *treatment*, mercury—head to be covered with flannel—diuretics—issues—compression of head—puncturing—Dr. Gower's plan, 100.
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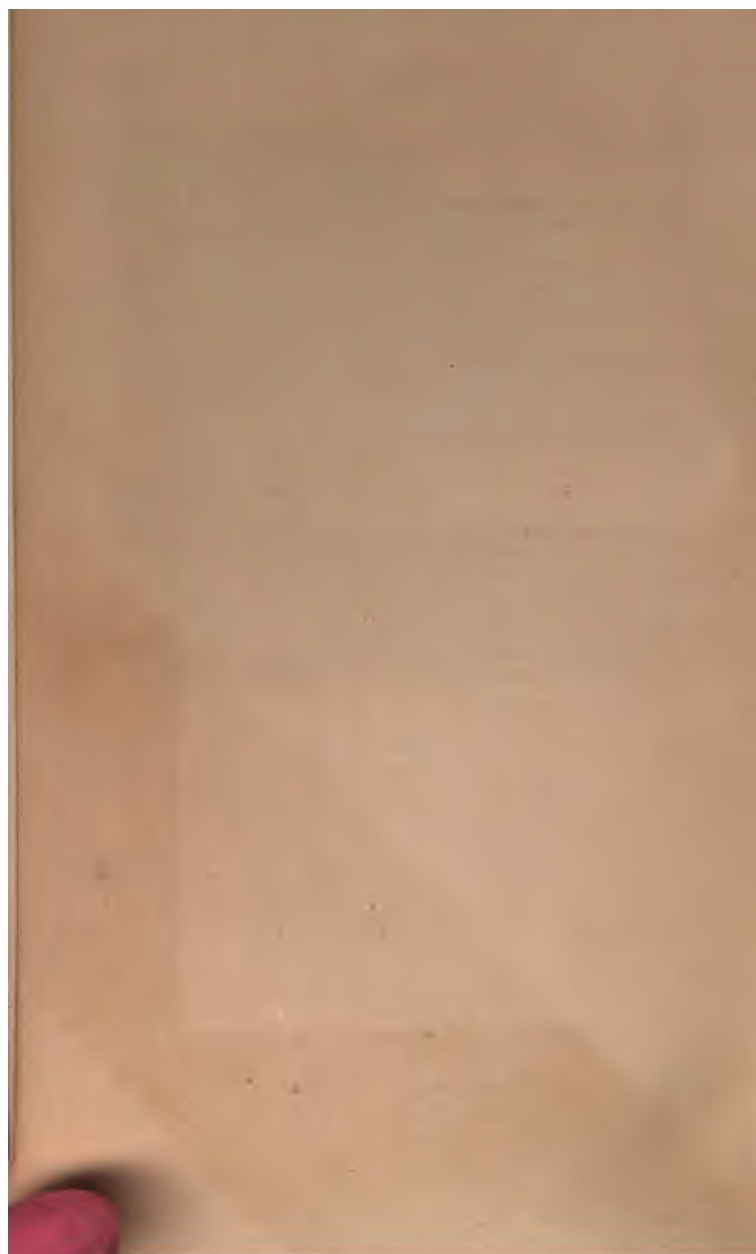
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